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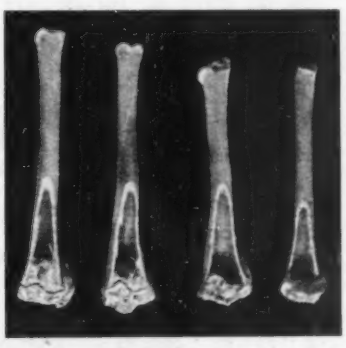

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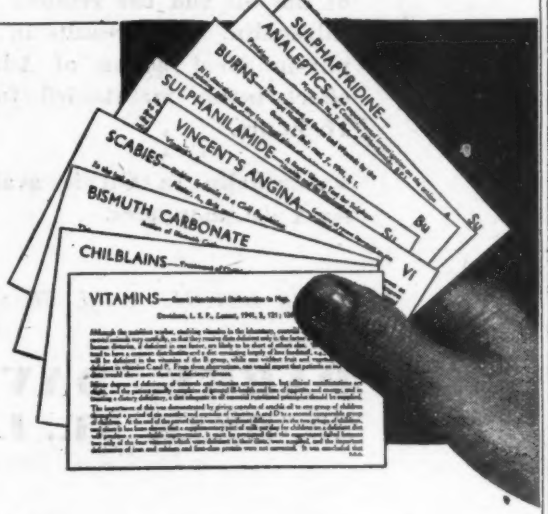

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Mr. B aged 53. Four years ago early sub-acute combined degeneration was diagnosed and parenteral liver extract was given for four years. At the end of this time the blood picture was far from normal and clinical signs of pernicious anæmia existed. Intensive treatment with parenteral liver extract for four months produced no change. 6 x 2 c.c. doses of Hepatex-T were given on successive days and a distinct improvement was noted. Treatment was then continued with Neo-Hepatex and after six weeks the blood picture was normal and the patient was well. Maintenance dosage was instituted for a further seven months and the patient's blood remained normal.

CONCLUSION. Hepatex-T obviously changed the haemopoietic tissues in such a manner that Neo-Hepatex was able to exert its full effect.

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INDICATIONS FOR HEPATEX-T

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EPIDEMIOLOGY OF JUVENILE RHEUMATISM *

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JUVENILE rheumatism is the least known of the great infectious diseases. The cause is obscure, the diagnosis often doubtful and the treatment symptomatic. Incidence and mortality are equally uncertain. The peculiar natural history of the disease and the lack of adequate statistics make the incidence difficult to estimate. For knowledge of the mortality we are largely dependent on the Registrar-General's reports, and they are not directly concerned with rheumatism as a cause of heart disease. These aspects of the epidemiology of juvenile rheumatism will be considered in the first part of our paper. The immediate infective agent of the disease is still undefined but much information has accumulated on the predisposing factors. In America, hereditary influences are increasingly stressed; in this country the malady has long been recognised as one of the group of social diseases. Observations are recorded in this paper on some aspects of the social background of the disease which hitherto appear to have escaped attention.

RHEUMATIC INFECTION

Several attempts have been made to measure the prevalence of the infection.

The Ministry of Health report on acute rheumatism (1927) estimated that 2% of the elementary-school population "in cities and towns require observation . . . on account of manifestations of rheumatic infection." Among insured adults a previous investigation (1924) found that the annual attack-rate for acute and subacute rheumatism was approximately 4·5 per 1000, and that 2·5% of all sickness absence was due to rheumatic conditions. Davidson and Duthie (1938) on the basis of a large sample study suggested that the annual rate for the whole population of Scotland was 6·5 per 1000. The disease seems to be declining in severity and commonness (Close 1930, Miller 1937) though Thornton (1938) estimated that in the LCC area the incidence in elementary-school children was still 2·5%.

Mortality from rheumatic fever has been falling with temporary interruptions for many years. In 1881–90 the rate per million living at all ages was 95, in 1911–20 it was 50, in 1939 it was 25. But rheumatic fever is important only in childhood. The trend here has not been so satisfactory. At five to ten and ten to fifteen years mortality in 1881–90 was 67 and 103; in 1911–20 the corresponding rates were 62 and 86; and in 1936–38 they were 50 and 60.

RHEUMATIC HEART DISEASE

Mortality.—Glover (1927) estimated an annual total for England and Wales of 25,000 deaths from rheumatic heart disease. Miller (1928) suggested 20,000. Wilkinson in 1935 quoted figures as high as 30,000, as low as 12,000. The difficulty arises because the International List, which is used in vital statistics, classifies deaths from heart disease almost entirely by anatomical lesions, and ætiology is not directly considered (Paul 1930, Hedley 1936). Clinical experience must therefore determine the rheumatic proportion of these deaths, and various series of cases (Grant 1933, Wyckoff and Ling 1926 and others) are available which indicate the age distribution of the different ætiological types. Of Grant's 1000 ex-soldiers with heart disease, the rheumatic group was approximately 80% of the total in the twenties, 65% in the thirties, 28% in the forties and 18% in the fifties. In Wyckoff and Ling's series of New York clinic and private patients about 9% of the cases between fifty and fifty-nine years and 4% of those over sixty years were rheumatic. Such percentages could be considered, by analogy, the rheumatic fraction of all cardiac deaths in the decade specified, though there are obvious sources of error in such a method. A check is provided by information on the expectation of life in patients with rheumatic heart disease. In De Graff and Ling's adult cases (1935) the average age of death was thirty-three; of Coomb's (1924) English series only 7% reached the age of fifty. Hedley (1940) in a large-scale investigation found that more than 50% of the deaths occurred under thirty years and only 3% over sixty. In New York (Swift 1940), where practitioners are now requested to specify rheumatism when applicable in deaths from heart disease, 40% of the cases so reported in 1938 were under thirty, 44% between thirty and sixty.

In view of the nature of such data, any estimate of mortality from rheumatic heart disease is bound to be rather speculative. We are therefore diffident in criticising the figures mentioned above; but they seem to us too high. The clinical evidence available suggests that the mortality was nearer 10,000 in 1938 and 11,000 in 1930. Since the total number of deaths from heart disease under forty-five in these years was 6722 and 7434, the current concept of the age-incidence of juvenile rheumatism must be erroneous if the higher estimates of 25,000 and 30,000 are more correct.

Rheumatism thus now causes about 10% of all deaths from heart disease, and close on 100% of those occurring under forty. Combining rheumatic fever, chorea and rheumatic heart disease, juvenile rheumatism is responsible for approximately 2% of all deaths in England and Wales, and for 10% between five and forty-five, when it is second only in females to phthisis, and follows phthisis and violence in males.

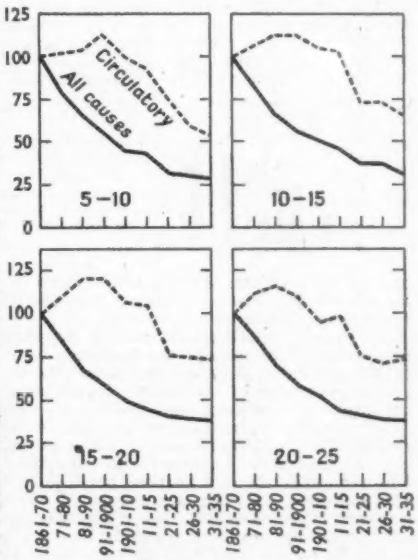

Fig. 1
Recent course of mortality from diseases of the circulatory system, excluding the war periods; the rate for 1861–70 is arbitrarily taken as 100. Male and female rates combined.

The total estimates just reached are so hypothetical that to judge mortality trends from a series of such would be pointless. Instead we have used all diseases of the circulatory system at five to twenty-five—a crude but adequate index. Fig. 1 shows a rather unsatisfactory course up to the 1914–18 war. Mortality during the 1920s was however at a considerably lower level. In adolescents and young adults the second retardation in the 1920s and 1930s is rather reminiscent of recent experience in phthisis. Since 1937 there has been a general improvement.

Incidence.—Once again we are obliged to piece together scattered bits of evidence.

Routine school inspection in recent years (Health of the School Child 1938) has shown that just over 5 children per 1000, or less than 30,000 in all, have organic heart disease. In London Thornton (1938) reported the incidence as 2% in 1926 and 0·8% in 1936. In adults it is impossible to state the incidence with any accuracy. Among insured workers the report on incapacitating sickness (Edinburgh 1939) showed that under the age of thirty-five the number of new cases of heart disease per annum was about 2 per 1000 in men, just under 3 in single women, and just over 3 in married women. In these groups the number ill of heart disease over the whole year was 0·12 per 1000, 0·35 and 0·41. Berkeley, Bonney and MacLeod (1938) indicate that 1–2·5% of all pregnant women have rheumatic heart disease. Periodic health examinations are rare in this country: one of us (Morris 1941)

* Part of this paper was read at a meeting of the Committee for the Study of Social Medicine.

found the incidence to be 1% in a sample of 1352 adult males. Another source of information is De Graff and Ling's (1935) series where fifteen years was the average between onset of the disease and final heart-failure. On the number of adult deaths already estimated, there appear to be 125,000–150,000 cases in England and Wales. Paul (1930) in his survey of the whole subject considered the incidence to be approximately 8·4 per 1000.

From a consideration of the available evidence it can be hazarded that there are nearly 200,000 cases of rheumatic heart disease at all ages in this country. This probably gives juvenile rheumatism the melancholy distinction of being first among all infections as a cause of chronic illness and disablement; chronic, but punctuated with frequent acuter episodes and occurring almost entirely in what should be the most useful years of life.

THE SOCIAL FACTOR

Juvenile rheumatism has long been known to be more prevalent—Glover (1930) suggests 30 times more—among the poor than the well-to-do. The British Medical Association committee (Miller 1926) and the Medical Research Council special report (1927), however, agreed with some earlier authorities and suggested that the incidence was more selective, being higher in the artisan class than among the very poor. This is an observation of great interest, and has been variously explained by Miller (1934b), Wilkinson (1935) and Poynton (1938). It has, of course, also been disputed—e.g., by Hill (1930), Glover (1934) and in the reports of the Kensington Rheumatism Scheme.

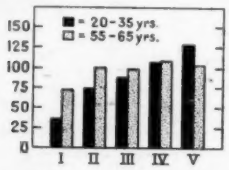

Fig. 2—Male mortality ratios (1930–32) from valvular heart disease and chronic endocarditis in different social groups graded from I to V (see text). The rate for all classes is taken as 100 in each age-group.

In the Occupational Mortality Supplements—those little-worked goldmines—the Registrar-General classifies deaths according to the occupational (and thus social and economic) status of the dead. He uses five classes: I, the upper professional and managerial strata; II, the lesser employers, managers and professions; III, the skilled and blackcoated workers; IV, semi-skilled, including agricultural workers; V, unskilled labourers. Unfortunately for our purpose here, social class ratios are presented only for age-groups of twenty and upwards. Those (1930–32) for rheumatic fever seem to offer some support for the artisan theory; in age-group twenty to thirty-five the ratios are: 108 for classes I and II, 100 for class III, 106 for class IV, and 84 for class V. But these will not be further discussed, because rheumatic fever is important only in childhood. Several types of heart disease are graded, and chronic endocarditis and valvular disease correspond most closely to the rheumatic group. Fig. 2 shows a steep rise in mortality with decline in social status; at twenty to thirty-five years the deaths in class V are some 400% of class I.

TABLE I—SOCIAL CLASS MORTALITY RATIOS FOR VALVULAR HEART DISEASE AND CHRONIC ENDOCARDITIS.

Males, 20–45 years. Standardised; the rate for all males is taken as 100.

Social class	1910–12	1921–23	1930–32
	%	%	%
I & II	83	79	72
III	87	92	93
IV & V	119	119	121
Excess of classes IV & V over classes I & II	143	150	168

This diagram represents the closest approximation possible of the social class mortality from rheumatic heart disease. In middle age the social gradient flattens, till between fifty-five and sixty-five, when other than rheumatic causes are increasingly common, the class V mortality is not greatly in excess of that for class I. Occupational risks in themselves are not important; the ratios for married women are almost the same as those for men. The social class gradient is not a new phenomenon: calculations based on material in previous supplements permit the comparison for age-group twenty to forty-five seen in table I. It may be noted that the excess of classes IV and V over class III has not altered much but their excess over class I has actually risen since 1910–12. There is no evidence here in favour of the artisan's disease theory; in so far as deaths from rheumatic heart disease can be considered an index of juvenile rheumatism the findings are very different.

TABLE II—REGIONAL ANALYSIS OF MORTALITY FROM HEART DISEASE IN YOUNG PEOPLE (per 100,000 living).

Region	1931–35 (ages 5–15)	1930–32 (ages 15–25)		Region	1931–35 (ages 5–15)	1930–32 (ages 15–25)	
	M. & F. combined	M.	F.		M. & F. combined	M.	F.
England and Wales	11	19	23	M1	10	19	23
				M2	11	18	23
London	11*	21†	29†	E	6	12	11
SE	6	14†	17†	SW	7	12	16
N1	12	24	26	W1	19	35	36
N2	12	16	21	W2	9	15	23
N3	14	22	27				
N4	14	20	29				

* Greater London; † Administrative London.

Regions.—SE = south-east England, excluding London. N1 = Northumberland and Durham. N2 = Northern rural belt. N3 = West Riding. N4 = Lancashire and Cheshire. M1 = West Midlands; M2 = East Midlands. E = Eastern Counties. SW = South-Western Counties. W1 = South Wales; W2 = North and Central Wales. Short descriptions all taken from the *Home Market*.

SOCIAL CLIMATE

The death-rates already cited are averages of England and Wales and include urban and rural, industrial and agricultural experience. The averages are thus made up from widely differing areas ranging from South-West England to the North-East and from Greater London to North and Central Wales. Clearly it is necessary to examine the incidence of juvenile rheumatism in such different settings. The study of these—the social geography of England and Wales—was much simplified when, in 1931, the Registrar-General divided the country into 12 major social and economic regions which bear much more relation to the realities of the social structure of the country than the older administrative divisions into counties, boroughs and districts, with their artificial aggregation into North, Midland, South and Wales groups. During the 1930s, for example, the South-East, Greater London, the South-West and the East were relatively prosperous with a low average of unemployment. South Wales (coal-mining), the North-East (heavy industry) and Lancashire (cotton) were all abnormally depressed with excessive unemployment rates. Between these economic extremes were the industrial Midland counties and the largely agricultural regions of North Wales, Westmorland and the North and East Ridings of Yorkshire. Such environmental factors can now be observed operating on a large scale and significant local differences need no longer be lost in national averages.

TABLE III—REGIONAL ANALYSIS OF MORTALITY FROM RHEUMATIC FEVER, 1926–30 (per 100,000 living).

Age-group 5–15 years.

Region	Boys	Girls
England and Wales ..	6·9	8·3
North	6·7	8·1
South	4·9	5·3
Wales	8·6	10·1

In tables II and III the regions have been used to construct rheumatism maps. Table II analyses the mortality from heart disease for ages five to twenty-five, the most rheumatic (in our sense) decades; hereafter heart disease in this age-group will be termed "(rheu-

matic) heart disease." The rates for South-East England, South-West and the Eastern Counties are low, for London and the Midlands about average, for the industrial North rather high, and for South Wales throughout in excess of all other regions. In 1930 the Registrar-General stopped listing rheumatic fever in his short tables. Mortality cannot therefore be analysed by the new regions; table III uses the older groupings and shows again a very high Welsh rate.

The regional differences in mortality can be expressed in another way—as percentages of the national figure taken as 100. This is done in fig. 3 for girls between five and fifteen. The ratios are also shown for two other social indices. The range between high and low is greater for (rheumatic) heart disease than for phthisis in young women, or for infantile mortality.[1]

The natural climatic factors in themselves seem to be unimportant; as the Registrar-General has pointed out, the climate in South-East and South-West England and in South Wales is very similar. Low-lying and wet East England had the best rate of all. Stevenson (1919) noted this in the decennial supplement for 1901–10. Discussing mortality from "rheumatic fever and rheumatism of the heart" he wrote that the "Fen Counties . . . return low rates, but the idea of any

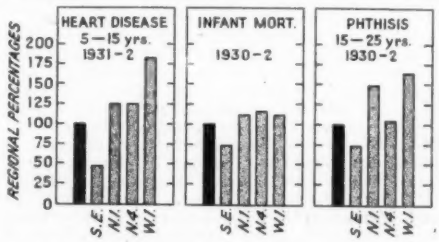

Fig. 3
Female mortality from heart disease, infantile ailments and phthisis, analysed according to regions.

special association with damp appears to be given up." The mills of God grind slowly.

In 1901–10 mortality at all ages for "rheumatic fever and rheumatism of the heart" showed similar trends with high rates in the north of England and in Wales. The figures for rheumatic fever in children, 1911–20, likewise closely resemble those found in later years. In 1936–39 there was an all-round improvement but the glaring regional disparities remained (see also Young 1921, 1925).

TOWN AND COUNTRY

Since Newsholme (1895) emphasised the influence of urbanisation in juvenile rheumatism this factor has been more or less taken for granted, and relatively little attention has been paid to it. Various investigators have found the incidence greater in the town than in the country. Fig. 4 illustrates the general effect of urbanisation on mortality from rheumatic fever and heart disease in childhood. The trend is quite clear in both and the

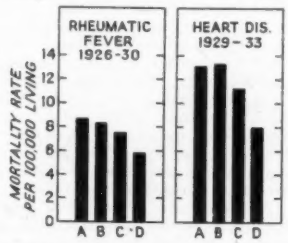

Fig. 4
Influence of town life on mortality from juvenile rheumatism (boys and girls combined) between 5 and 15 years. A = administrative London; B = all county boroughs; C = all other urban districts; D = all rural districts.

gradation is steady; mortality rises with increasing density of population.

The regional break-up of these national figures is once more illuminating. Fig. 5 shows the mortality-rates for rheumatic fever in boys and girls in the regions used by the Registrar-General before 1931. It can be seen that there is a trend in the expected direction, though it is not very pronounced, in all three divisions. Table IV makes the same analysis for heart disease in children, boys and girls combined, in the Registrar-General's social regions. (The pattern is identical in young adults, both men and women, but we have presented only the children's table, as internal migration may have complicated the picture at fifteen to twenty-five years.)

TABLE IV

INFLUENCE OF TOWN LIFE. REGIONAL ANALYSIS, 1929–33.
Mortality from heart disease at 5–15 years per 100,000 living. Boys and girls combined.

Population density	Regions of England and Wales										
	N1	N2	N3	N4	M1	M2	E	SE *	SW	W1	W2
County boroughs	10·3	14·4	13·8	15·1	12·7	14·5	9·9	11·5	10·4	17·9	..
Urban districts	12·5	13·6	11·7	12·5	12·8	13·4	6·9	8·3	7·6	20·1	6·8
Rural districts	11·7	6·5	12·3	9·4	6·5	11	3·9	5·1	4·9	18·8	9·3

* Excluding administrative London.

Most of the individual regions show the same unmistakable rise in mortality with increasing urbanisation as was found in all England and Wales; in the North-East and the West Riding the rural rate was about the same as the urban, in Wales it was worse. It is true that the North-East contains some large mining communities anachronistically labelled rural, but in a discussion of density per acre there is no comparing these with the highly urbanised county boroughs such as Newcastle, Sunderland, Leeds, Sheffield or Bradford.

When next the factor of urbanisation is kept constant and areas of similar density are compared, definite discrepancies are discovered. The wide range between the best and worst in all three categories suggests that density of population is not the key factor, and that powerful influences other than urbanisation are operating. At each level, the highest rates are found in South Wales and North England. But the most interesting feature of this regional layout is that mortality from rheumatic fever was greater in the Welsh rural districts than in the urban areas of the whole country (fig. 5) or of the North or South; and in the same way mortality from (rheumatic) heart disease was higher in the villages of South Wales than in all the big towns, grouped nationally or regionally. We can therefore conclude

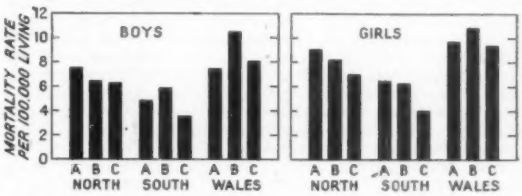

Fig. 5—Influence of town life on the mortality from rheumatic fever between 5 and 15 years, analysed according to regions (1926–30). A, county boroughs; B, urban districts; C, rural districts.

that whilst urbanisation is an unfavourable influence it is not nearly so decisive as is commonly supposed.

Climate, again, cannot account for the differences found among the northern and southern villages. Rather it seems that the social circumstances in the rural districts of the depressed areas have easily outweighed any advantages derived from their rural structure, and produced death-rates in the North higher than in the big towns of the more prosperous areas, and in South Wales higher than in the worst of the big towns. In this connexion it may be mentioned that Danischewsky (quoted by Glover 1930), discussing the high incidence of acute rheumatism in Moscow, noted that it was still greater in the agricultural villages around the town.

Juvenile rheumatism is not the sole instance where the rôle of urbanisation has been overrated. In infantile mortality and tuberculosis of young people, for example, the same distribution holds, and the rural districts of the North and Wales register higher mortalities than the much more densely populated cities of other parts of the country.

1. For a general discussion of regional mortality see "Poverty and Population," by R. M. Titmuss. London. 1938.

MORTALITY IN THE COUNTY BOROUGHS

The death-rates for (rheumatic) heart disease in the county boroughs, then, vary widely. To determine what part social factors play in this is not easy. In the first place there is no ready-made index which assesses the social status of these towns. The levels of unemployment or Poor Law relief are too sensitive to swings of the economic pendulum; Stock's Social Index (1936), which will be used, is not sensitive enough. This index is based on the local distribution of the five social classes. The proportion in classes IV and V (the male semi-skilled and unskilled workers over 14 years) is taken as a measure of local poverty at the time the returns were made, in 1931. Unfortunately, the allocation to the different classes was based on the normal occupation of the individual when in work. No account was taken of unemployment, and consequently the fact that a great number of men and their families had been subjected to a reduction in their standard of living for anything from a few months to many years was not reflected in the social index. However, this index is easily the best available. In table V the county boroughs are grouped into five grades of diminishing prosperity; group 1 has less than 28% in social classes IV and V, group 5 has over 43%; the remainder are evenly spaced in between. The table also

TABLE V—MORTALITY FROM (RHEUMATIC) HEART DISEASE, THE SOCIAL FACTOR IN THE COUNTY BOROUGHS.

Mortality from heart disease at 5–25 years per 100,000 living, male and female combined. 1929–33.

County borough group	No. of C.B.s in group	Proportion per 1000 in social classes IV and V	Death-rate from heart disease in young people
1	12	< 283	12·8
2	14	284–333	17·6
3	27	334–383	18·7
4	20	384–433	21·8
5	10	434 +	22·2

shows the death-rates for (rheumatic) heart disease in these county borough groups for the five years 1929–33. The trend is quite clear: the rate for the poorest group of towns is considerably worse than for the most prosperous; there is a steady deterioration from grade 1 to grade 5.

OVERCROWDING

The microclimate (Danischewsky's expression)[9] has also been studied. Housing is usually implicated in the production of juvenile rheumatism by two factors—damp (e.g., Miller 1926) and crowding (e.g., Perry and Roberts 1937, Bach et al. 1939). On the first of these we have no new observations to offer. The degree of overcrowding can be measured both regionally and for the county boroughs from the Ministry of Health Overcrowding Survey. The North-East is worst housed by far, being more than twice as crowded as Greater London and four times worse than South Wales. Correlation with mortality from juvenile rheumatism is thus not at all close, and is much clearer for infant mortality and the general death-rate in young people. The county boroughs were again divided into five groups, according to their degree of crowding. Mortality from (rheumatic) heart disease at between five and twenty-five rose steeply from 13·5 per 100,000 living in group 1, with least overcrowding, to 23·2 in group 4, but fell again to 19·5 in group 5—that is, to almost exactly the same rate as in group 3. Again some correlation emerged, but again not a close one. These findings may be material to the discussion (MRC Special Report 1927, Wilson 1940) on familial incidence and contagion. It is interesting that the reverse was found in phthisis mortality of young people (Hart and Wright 1939) where the correlation with overcrowding was much more obvious than for poverty as such when measured by the Social Index.

DISCUSSION

There is general agreement on the broad issue that juvenile rheumatism is intimately related to an unsatisfactory social environment. Discussion mostly centres on the view that incidence is not determined by the degree of poverty but is highest in the artisan class, and the existence of some particular poverty factor which is primarily responsible for the disease. The approach to these ancient controversies has hitherto been mostly clinical; we have tried the complementary method of statistical analysis which seemed to us more likely to clarify such social medical problems.

We have dealt only with mortality statistics for the very good reason that so few others are available; our ignorance of the morbidity of juvenile rheumatism as of many other major disorders is a long-standing complaint which will not be remedied until periodic health examinations of the whole population are instituted. Schlesinger (1938) has rightly warned against over-emphasis of the fatal issue in this disease—patients do recover from it, or may lead useful lives in spite of it. Mortality does, nevertheless, measure the significance of the condition for the public health, and it sums up the long preceding years of suffering and incapacity. The power of the social factor over mortality from juvenile rheumatism seems established, but it may be objected that the findings cannot simply be applied to the related problems of the incidence of the disease. This difficulty cannot be fully overcome, but meanwhile analysis of the material suggests that the social factor operates principally by enhancing the infection or lowering resistance to it. The other phase of the disease—the cardiac—does not appear to be so strongly affected: neither pregnancy nor occupation, for example, seem to have much influence on the trends which are almost identical for both sexes, for children and young adults. Infection dominates the natural history of this disease—the original tonsillitis, the chronic, relapsing, increasingly severe rheumatism itself, the adventitious respiratory catarrhs. Throughout, the rôle of the unsatisfactory environment is evident. Coborn (1931) noted that hæmolytic streptococcal throat infections were commoner in the unhygienic living conditions of the poor. The class incidence of acute and subacute rheumatism was well illustrated by Still's figures (1927); and Hedley (1940) suggests that the more severe forms of rheumatic infection are relatively commoner among the very poor. Miller (1934a) observed that no rheumatic child living in his own environment is ever free from the danger of relapse; the relationship of respiratory infections with overcrowding need not be discussed. The thread of infection that runs through the history suggests that the observations made here on mortality may apply with equal emphasis to the earlier stages of the disease as well.

Various field studies—for example, that of the Bristol and Three Counties by Savage in 1931 and the MRC investigation in Glasgow and London in 1927—have analysed poverty in an attempt to discover if any particular constituent was responsible (see also Poynton and Schlesinger 1937). The findings have largely been negative. Damp has most persistently been blamed; yet when other conditions are satisfactory, whether in public schools or colonies for mental defectives, there may be little or no rheumatism. Dutch experience points in the same direction. The specific adverse influence of urbanisation is not proven. A low standard of living, wherever it occurs, whether in town or village, increases the death-rate from rheumatic fever and rheumatic heart disease. But poverty is neither the result nor even the necessary associate of greater population density, and to say urbanisation when we mean poverty is no help to clear thinking. Nor do the effects of industrialisation afford an easy explanation. That the fathers of these rheumatic children in the Welsh and northern villages may have been employed at one time or another in the mines cannot directly affect the issue; and the smoke-laden atmosphere of our cities does not apply here. As to overcrowding, our findings have been even less conclusive. The concept of a "rheumatic stratum" (Miller 1926), excluding the well-to-do on the one hand and the very poor on the other, received no confirmation. Both regionally and in the big towns, mortality was seen to rise with the degree of poverty.

Climate in this country has little influence. The mortality-rates for South-West England and South Wales have already been compared. The contrasts between the rural districts of the north are equally definite. It is interesting that increasing doubt is being cast on the supposed immunity of tropical populations. Swift (1940) discusses the recent and very equivocal literature on this subject. He adds the comment that "crowding, poor housing and poor nutrition seem to

play almost as important unfavourable rôles in hot as in cold climates."

The upshot seems to be that all these factors, damp and crowding, malnutrition and fatigue, lack of sunshine and holidays, inferior medical care, inadequate clothing and leaky boots are responsible—the whole life of the underprivileged child. "The destruction of the poor is their poverty." In social medicine such multiple non-specific causation is not unexpected. The first stage in this long history may well be a child constitutionally predisposed to rheumatism. On the whole question of inheritance there is little substantial evidence. In any case, the disease is seen to be so sensitive to social inequality that emphasis on hereditary influences is premature.

We have been able to touch on only a few of the problems involved. It is still true as in 1927, when Newman wrote, that "no field of preventive medicine offers larger scope for scientific and social investigation than acute rheumatism."

SUMMARY AND CONCLUSIONS

The morbidity and mortality of juvenile rheumatism have been examined with special reference to the social background of the disease.

Among infections in this country juvenile rheumatism is probably the greatest cause of sickness and disablement. It causes 2% of all deaths in England and Wales, 10% of all between five and forty-five. Mortality is declining, though more rapidly in children than young adults. Regionally, and in the county boroughs, the death-rate varies widely and rises with the degree of poverty.

Mortality on the whole increases with the density of population; this seems to be a function of the greater poverty in the towns. The depressed rural districts return rates as high as the worst of the big towns.

No evidence was found to suggest that the artisan stratum is particularly prone to the disease. Climate seems of little importance. Correlation with over-crowding was inconclusive.

The facts elucidated strengthen the view that the whole complex of poverty is involved in the production of juvenile rheumatism.

We are obliged to Dr. J. A. Glover and Lieut-Colonel M. L. Rosenheim for their comments on the paper and to Dr. Percy Stocks for the 1939 figures.

REFERENCES

Bach, F., Hill, N. G., Preston, T. W. and Thornton, C. E. (1939) *Ann. rheum. Dis.* **1**, 210.
Berkeley, C., Bonney, V. and MacLeod, D. (1938) The Abnormal in Obstetrics, London.
Close, H. G. (1930) *Guy's Hosp. Rep.* **80**, 372.
Coborn, A. F. (1931) The Factor of Infection in the Rheumatic State, Baltimore.
Coombs, C. (1924) Rheumatic Heart Disease, Bristol.
Davidson, L. P. and Duthie, J. J. R. (1938) Chronic Rheumatic Diseases. London. Department of Health for Scotland (1939) Report on Incapacitating Sickness, No. 7.
Glover, J. A. (1927) *Rep. publ. Hlth med. Subj., Lond.* No. 44; (1930) *Lancet*, i, 499, 607; (1934) *Proc. R. Soc. Med.* **24**, 953.
De Graff, A. C. and Ling, C. (1935) *Amer. Heart J.* **10**, 459.
Grant, R. T. (1933) *Heart*, **6**, 275.
Hart, P. D'A. and Wright, G. P. (1939) Tuberculosis and Social Conditions in England, London.
Hlth Sch. Child. 1938, (1940) London.
Hedley, O. F. (1936) *Publ. Hlth Bull., Wash.* p. 23; (1940) *Ibid*, p. 55.
Hill, N. G. (1930) *Brit. J. Child. Dis.* **27**, 161.
Kensington Rheumatism Scheme. See Annual Reports of Medical Officer for Kensington Borough Council.
Miller, R. (1926) *Brit. med. J.* ii, **2**, suppl. p. 5; (1928) *Proc. R. Soc. Med.* **21**, 997; (1934a) *Lancet*, i, 1301; (1934b) *Proc. R. Soc. Med.* **24**, 959; (1937) British Encyclopædia of Medical Practice, London, vol. vi, p. 234.
Ministry of Health (1924) *Rep. publ. Hlth med. Subj., Lond.* No. 23; (1927) *Ibid*, No. 44.
Morris, J. N. (1941) *Lancet*, i, 51.
Newman, G. (1927) *Rep. publ. Hlth med. Subj., Lond.* No. 44.
Newsholme, A. (1895) *Lancet*, i, 592.
Paul, J. R. (1930) Epidemiology of Rheumatic Fever, New York.
Perry, B. and Roberts, F. (1937) *Brit. med. J.* ii, suppl. p. 154.
Poynton, F. J. (1938) *Proc. int. Cong. Rheum. Hydrol. London*, p. 174.
— and Schlesinger, B. (1937) Recent Advances in the Study of Rheumatism, London.
Savage, W. G. (1931) *Brit. med. J.* ii, suppl. p. 37.
Schlesinger, B. (1938) *Lancet*, i, 593, 649.
Spec. Rep. Ser. med. Res. Coun., Lond. (1927) No. 114.
Stevenson, T. H. C. (1919) 75*th Rep. Reg. Gen., Lond.* Part 3, suppl.
Stocks, P. (1936) *Stat. Rev. Reg. Gen., Lond.* 1934.
Swift, H. (1940) *J. Amer. med. Ass.* **115**, 1509.
Thornton, C. E. (1938) *Rep. Sch. med. Offr, L.C.C.* vol. iii, part 2.
Wilkinson, K. D. (1935) *Lancet*, ii, 411.
Wilson, G. (1940) Rheumatic Fever, New York.
Wykoff, J. and Ling, C. (1926) *Amer. Heart J.* **1**, 446.
Young, M. (1921) *J. Hyg., Camb.* **20**, 248; (1925) *Lancet*, ii, 590.

TEMPORARY LENS CHANGES IN DIABETIC COMA

AND OTHER DEHYDRATIONS

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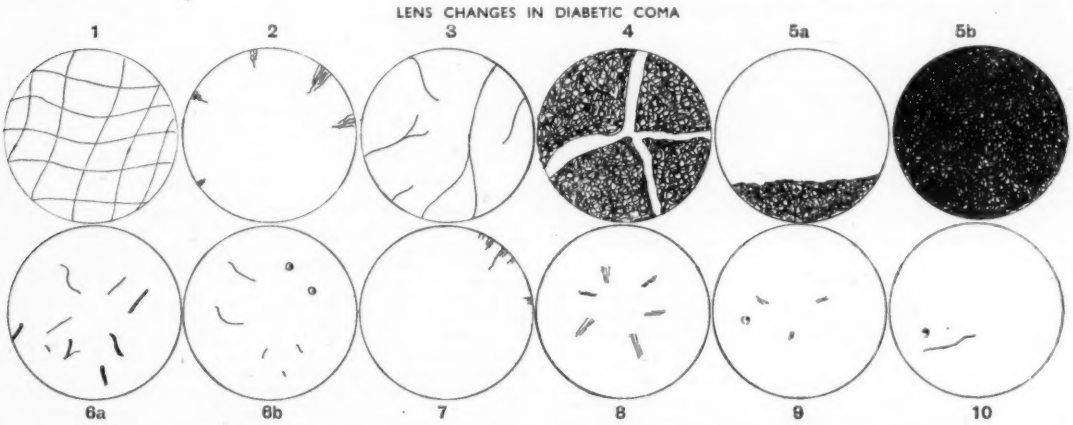
WE have recently observed that temporary changes in the lens are constantly visible in cases of diabetic coma accompanied by severe dehydration, and have also noticed similar transient changes during dehydration in 2 non-diabetic patients. Comparable changes have been produced experimentally in animals by osmotic disturbances (Duke-Elder 1940)—for instance, the subcutaneous injection of 0·25 g. sodium chloride into a frog makes the lens opaque and this opacity rapidly disappears on plunging the frog into water. As far as we know, this phenomenon has not been recorded in the human eye except in connexion with the intense dehydration of cholera (Duke-Elder 1940) and nowhere in detail. This is not surprising as the treatment of dehydration calls neither for the opinion of an ophthalmologist nor any examination of the eye, other than digital impression of its tension. One of us (R. D. L.) noticed these curious eye changes in a case of profound diabetic coma some 10 years ago, but it was not until we have recently made a routine examination of the lens in such cases that we became aware of their frequency. Our examinations have consisted merely in direct ophthalmoscopy using a +12 to a +20 dioptre lens, +15 usually giving the clearest focus of the opacities. So far we have been unable to observe more accurate detail with a slit-lamp, and, with the exception of one case, it has been impossible to assess subjective visual defects in these semiconscious or unconscious patients. We have also been unable to obtain the critical coöperation of an expert ophthalmologist in these observations, but this we hope will later be remedied in our own and other cases.

The most common change (seen against the red retinal reflex) consists of a wavy gridiron (fig. 1) with the lines showing dark against the red background, as if the capsule were wrinkled in folds. In some cases, especially in the early phase and during resolution after intravenous saline treatment, no complete pattern has been seen, but only a fine crinkling confined to the periphery (fig. 2) or an odd peripheral streak. When dehydration has been more severe bolder streaks like water cleavages have been seen (fig. 3), and quadrantic patterns (fig. 4) showing up darkly against the red retinal reflex and seemingly situated more deeply in the lens. In one case only has an opacity complete enough to blot out the retinal reflex been observed, which began at the bottom of the lens and spread upwards (figs. 5a and 5b). The changes were not symmetrical in both eyes but were of the same general pattern. One case carefully observed by Mr. Eric Lyle in 1935 showed a different intensity of pattern at 2-hourly periods of observation in correlation with the degree of dehydration. Here the lenses showed linear striation (fig. 6a) which became fainter as the dehydration was relieved by intravenous infusion. The lens showed only very faint striations 29 hours after admission though small opaque bubbles appeared at the periphery (fig. 6b) which persisted until the patient's death 18 hours later.

These changes have been observed in 5 out of 6 cases of diabetic coma in the past 3 months—indeed, in all cases that showed severe dehydration. The 6th case was complicated by auricular fibrillation and heart-failure and was only slightly dehydrated. In all cases the criteria of dehydration were a sunken facies, hæmo-concentration, a systolic blood-pressure under 80 mm. Hg and very low eye tension. This ocular hypotension was sometimes intense and was measured in similar cases some years ago by Mr. G. T. W. Cashell who obtained readings of 5–10 mm. Hg (Schiotz method: normal 20 mm. Hg), figures comparable with the tension after death. This shows how intensely the eye suffers in diabetic coma and the amount of water that must be withdrawn from the aqueous, lens and vitreous gel, the last being probably the most concerned in the production of ocular hypotension.



The duration of the dehydration necessary to produce visible lens changes is not accurately known as it has been impossible to determine how long it had been present before admission. In one case of mental degeneration in which the patient was allowed to go into coma by stopping insulin treatment, the changes were first observed 60 hours after the cessation of insulin and 48 hours after onset of symptoms of dehydration, but were by then relatively advanced (fig. 5a); 12 hours later the right lens was completely opaque (fig. 5b) and the left showed intense cleavages and was semi-opaque.

Another patient, a boy of 14, was admitted in diabetic coma with a fair degree of dehydration and moderately low ocular tension. On admission, his right lens showed no changes though fine peripheral crinkling was visible in the left lens capsule (fig. 7); 5 hours later, after the administration of two litres of intravenous fluid, both lenses appeared normal; 26 hours after admission, however, all symptoms and signs of dehydration having disappeared, streaky black opacities were seen in both eyes (fig. 8) which gave the impression of permanency, and, in contrast to the changes first seen, appeared to be in the substance of the lens rather than in the capsule. After a further 4 hours these had almost disappeared, only a few fine etchings being present in both lenses (fig. 9), while 3 hours later—33 hours after admission—the right lens was again normal and the left showed only one bubble and one small cleavage line (fig. 10). The boy, who was conscious throughout, did not complain of any alteration in sight, and in spite of the presence of the changes depicted in fig. 8 could read a book without discomfort.

We have observed similar lens changes in 2 non-diabetic patients with severe dehydration, caused in one by the vomiting of intestinal obstruction and in the other by an exacerbation of chronic ulcerative colitis. We should expect it to occur in severe diarrhœa and vomiting in infants but have not had the opportunity of examining any such cases.

DISCUSSION

We think the basis of these changes is clear, and that their development depends on dehydration and their disappearance on rehydration. It is interesting to discuss the phenomenon, especially in relation to the permanent cataracts that develop in diabetics. The chemical composition of the lens substance and the processes regulating and stabilising its osmotic composition are not fully understood, but it is certain that the capsule is permeable to diffusible substances such as water, salts and sugar, and that the lens matrix contains free water as well as water fixed to the protein colloids. When the blood and subsequently the aqueous is dehydrated, the free water will ultimately diffuse out of the lens so that the lens substance is reduced in bulk and the capsule becomes wrinkled, the earliest and most typical appearance seen. Besides this there is probably some opacifying change in the lens fibres themselves to produce such an appearance as seen in figs. 4, 5a and 5b. These changes are reversible if the water is rapidly replaced and the lens clears up completely. But if the water of hydration of the colloids is sufficiently interfered with and the protein coagulated, the process is irreversible and the opacities are permanent. This process perhaps throws light on the production of diabetic cataracts, which are of two types.

Acute cataracts are rare and occur almost entirely in young diabetics. They develop rapidly and opacity may become very dense within a few days. The lesions are said occasionally to be reversible if treatment is rapid (Joslin 1940) but all those we have seen have been permanent and indeed progressive except in cases of acute dehydration described above. Braun (1935), however, describes the complete disappearance of a posterior rosette cataract within 16 days in a boy of 19. We would suggest that these acute cataracts are probably initiated by the type of water disturbance described above, and one of our patients gives a clear history of developing visual defects and cataracts soon after a diabetic coma. Yet these acute permanent cataracts are so rare and the occurrence of dehydration so relatively common in the juvenile cases that a higher incidence would be expected if hydration were the only factor involved.

Whether the same factor operates in producing the common and slow opacities in elderly diabetics is doubtful. Indeed although it has been generally accepted that cataracts are commoner and occur at an earlier age in elderly diabetics than normals, even this is uncertain. Waite and Bentham (1935) found the incidence of senile cataracts no greater in 2000 diabetics than in non-diabetics of comparable age-groups and others have come to the same conclusion (Braun 1935). It is therefore uncertain whether the majority of such cataracts are in any direct way connected with the diabetes.

Duke-Elder (1940) in discussing the ætiology of diabetic cataracts mentions eight possible factors and appears to think the "hydration of the lens by osmotic influences" the most weighty, but describes a mechanism the exact opposite to that expressed in this paper. He argues that, at least in less severe grades of diabetes, there is such a loss of salts in the urine that ultimately the aqueous becomes hypotonic and actually gives water into the lens. "The lowered osmotic pressure of the aqueous thus determines the inflow of water into the lens, causing, first its deformation and myopia, and eventually the œdema and hydration which results in cataract." We cannot agree with this view and would point out that whenever the diabetes is bad enough to cause thirst tissue dehydration is always present and water will at first be withdrawn from the lens if it suffers any osmotic change at all. At other times when the diabetes improves the lens will be rehydrated, and, as years go on, the vicissitudes of the diabetic condition will be accompanied by brief phases of dehydration, rehydration and even occasional superhydration. Such changes must cause instability of hydration with possible disturbances of nutrition and structure leading to opacification.

We have never seen any visible lens changes during the temporary disturbances of focus that occur so often in two different phases of diabetes, whereby the acute onset or exacerbations of diabetes are accompanied by myopia and the removal of sugar through treatment by intense hypermetropia up to +8 D. Both these phases last only 3–10 days and disappear in spite of the persistence of the same metabolic condition that initiated the changes. Such visual changes are almost certainly due to osmotic variations, but the media remain clear.

SUMMARY

Cases of temporary lens opacification occurring in association with the severe dehydration of diabetic coma, and also in 2 cases of severe dehydration from other causes, are described.

These lens changes seem to be directly dependent on dehydration and disappear when it is corrected by saline replacement. The part played by such water changes in the production of permanent diabetic cataracts is thought to be important in acute juvenile forms but of doubtful influence in the cataracts which develop in older diabetics.

REFERENCES

Braun, R. (1935) *Klin. Wschr.* **14**, 222.
Duke-Elder, S. (1940) Textbook of Ophthalmology, London, vol. III, pp. 3139, 3208 and 3209.
Joslin, E. P. (1940) Treatment of Diabetes Mellitus, London, p. 548.
Waite, J. H. and Beetham, W. P. (1935) *New Engl. J. Med.* **212**, 367.

MIDDLE MENINGEAL HÆMORRHAGE IN CHILDREN

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THE following 3 cases of bleeding from the middle meningeal artery are reported because of the absence of initial concussion and because of the long latent period before the onset of symptoms. In each case the injury was apparently trivial and was not associated with amnesia. The case-notes demonstrate the necessity for a close watch on any child whose head has been injured, and gives some indication of the type of case in which compression is likely to develop. In 2 of the cases irritability and vomiting occurred, 6 hours and 2 hours respectively after the accident; these symptoms may be regarded as an "alert."

CASE-HISTORIES

CASE 1.—A boy, aged 13, was admitted to the Richmond Hospital at midnight on Sept. 20, 1940. At 6 P.M. the previous day he had been hit by a ball on the right side of his head. He was slightly dazed but was able to sit on the crossbar of a bicycle while being taken to a nearby hospital, where a small scalp wound was sutured. During the night he was irritable and vomited several times. On admission to the Richmond Hospital, 30 hours after the accident, he was fully conscious and was able to explain about the accident. He did not complain of headache. On Sept. 21 he was irritable, lying curled up, refusing drinks and resenting examination. Radiological examination of the skull was negative. Next day he had incontinence of urine. Lumbar puncture: clear fluid; pressure 100 mm. of water. On the 23rd, 24th and 25th his condition was unaltered except for a lessening of coöperation with the nursing staff. On the 26th he had a dilated right pupil with sluggish light reflex, left hemiparesis and a left Babinski sign. An operation was performed under local anæsthesia and a large extradural hæmatoma was evacuated. Bleeding from the anterior branch of the artery was controlled by diathermy. Next day his pupils were equal but his clinical condition was not improved. The possibility of a further hæmorrhage was considered and the wound was reopened. This secondary operation revealed the dura up to the bone level, and no fresh hæmorrhage. The dura was opened to allow of a small decompression. A left temporal trephine, performed at the same time, was negative and revealed a shrunken brain. On return to the ward he was given an intravenous drip saline. His condition improved rapidly; the following morning he appeared bright and alert and had no neurological signs. On Nov. 30 he was discharged from hospital. His protracted stay was due to a leak of cerebrospinal fluid from his wound. This probably resulted from reopening the wound and necessitated two plastic operations before it finally healed.

Notable points were the late onset of focal signs, incontinence of urine 3 days after the accident, and the normal pressure of the CSF in the presence of an expanding lesion.

CASE 2.—On the evening of June 22, 1941, a boy of 11 received a blow from a stone on the left side of the head which momentarily dazed him. He was admitted to the district hospital for observation. Reports state that he was conscious on admission and only complained of pain in the left ear, which was bleeding; he was otherwise bright and alert and anxious to be allowed home. On the morning of June 24, 36 hours later, he was found unconscious in bed. Details about the mode of onset of coma were not obtainable. At 3 P.M. he was admitted to the Richmond Hospital. He was then unconscious with a right hemiplegia, a bilateral Babinski sign and a complete left third nerve paralysis. The pulse-rate was 150–160 per min. and blood-pressure 110/70 mm. Hg. Radiological examination demonstrated a vertical fracture extending across the left squamous temporal bone on to the parietal bone. At operation a large extradural hæmatoma was evacuated from the left side, and a bleeding posterior branch of the middle meningeal artery was controlled by diathermy. The dura was seen to be stripped off the bone almost to the middle line, backwards under the parietal bone and to the sphenoidal ridge in front. The wound was closed with drainage leaving this huge cavity between the dura and the bone. On the 25th at 8.10 A.M. he died without regaining consciousness. His fluid intake had been maintained by a pint of citrated blood followed by a continuous drip saline of 5% glucose solution. Autopsy revealed a small tentorial pressure cone, but no fresh hæmorrhage or evidence of re-expansion of the brain.

The points to be noted in this case are the importance of constant supervision, and the futility of operating when the patient's brain has been compressed for such a long time.

CASE 3.—On Nov. 12, 1941, a girl of 6 years fell from a moving bus and was momentarily dazed but was able to walk home, a distance of about 1½ miles. On arriving home she complained of a severe headache, became very irritable and vomited several times. On the 14th, at 11 P.M., on admission to the Richmond Hospital, she appeared normal in every respect. Neurological examination was negative. Radiological examination demonstrated a linear fracture of the right squamous temporal bone. On the 16th at midday, her pulse-rate suddenly dropped from 80 to 64 per min., and the bradycardia was accompanied by a severe frontal headache. Examination demonstrated a hard, non-pulsating swelling in the right temporal region which obliterated the contour of the zygoma. No other clinical abnormality was discovered. At this stage the association of a fracture of the temporal bone with a temporal swelling justified the diagnosis of an intracranial hæmorrhage with some sort of safety-valve mechanism. Under bromethol ('Avertin') anæsthesia, supplemented by local infiltration, the right temporal region was explored through a vertical incision. Retraction of the temporal muscle demonstrated that the squamous bone was bulging outwards, allowing a fringe of hæmatoma to protrude through the avulsed suture line. The bone was opened and a large extradural clot with a bleeding anterior branch of the middle meningeal artery was found. The child made an uneventful recovery and was discharged from hospital three weeks after admission.

An interesting feature of this case is the way in which the expanding hæmorrhage by lifting the bone produced a spontaneous decompression.

SUMMARY

In three cases of extradural hæmorrhage in children initial concussion and amnesia for the accident were absent in every case. The first sign of an intracranial lesion in 2 of the cases was vomiting with irritability. These phenomena may indicate the onset of compression of the brain in cases in which there has been no concussion. After definite concussion these symptoms usually indicate a step towards recovery.

In the first case incontinence of urine could be regarded as the first focal sign indicating involvement of the frontal lobe; the next sign was a dilated right pupil. In the second case the first focal sign was probably dilatation of the pupil. In the third no focal signs developed.

I am indebted to Mr. A. A. McConnell for permission to treat and publish these cases.

INFLUENCE OF THYROTOXICOSIS ON MENSTRUATION

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SCANT attention seems to have been paid to the accurate study of the influence of thyrotoxicosis on menstruation. Indeed, misleading views on this subject are common in the standard English textbooks, some of which make the bald statement that thyrotoxicosis tends to produce menorrhagia, whereas in the series of 139 cases analysed below this symptom was present in 2 cases only. The cases were all seen at the LCC Thyroid Unit since its inception in 1932.

In general our results correspond closely to those published by Gardiner-Hill and Smith[1 2] from St. Thomas's Hospital. The inquiry has been directed towards finding out the effects of thyrotoxicosis on menstruation and the effects of thyroidectomy on the menstrual periods. Preliminary attempts were made to classify cases as primary and secondary toxic goitre, but the distinction is not always easy to make and seemed to have no advantages. Doubtful and non-toxic cases have been omitted; and so have cases in which other factors were present which might influence menstruation. Thus we have not included patients at or near puberty or the menopause, those with a history of recent delivery or abortion, or those who had recently undergone gynæcological operation such as curettage or insertion of radium into the uterus.

Grading of cases according to severity makes it easier to appreciate the progressive effects of the disease, and to assess the scope of operation. Such grading must of necessity be somewhat elastic, since personal standards vary, but we classified our cases as severe, moderate or mild on the following basis.

Severe cases.—These, when at complete rest and under treatment with Lugol's iodine, had a persistent tachycardia of 120 per min. or over for two days or more after admission. The basal metabolic rate (measured by the Benedict-Roth method) was +30 or over. Severe emaciation, exophthalmos or other toxic signs were present, but the signs and symptoms were not necessarily all present in each case. There were 29 cases of this type, with 5 deaths, 2 of which occurred without operation.

TABLE I—MENSTRUATION IN 139 CASES OF UNTREATED THYROTOXICOSIS

Group	Menorrhagia	Normal periods	Scanty or irregular periods	Amenorrhœa
Severe ..	0	8 (27·5%)	4 (14%)	17 (58·5%)
Moderate ..	2 (3%)	35* (50%)	25 (36%)	8 (11%)
Mild ..	0	34 (85%)	5 (12·5%)	1 (2·5%)

* One moderate case had menorrhagia before the appearance of the goitre but the periods became normal as the goitre appeared. After operation the menorrhagia returned.

Moderate cases.—Pulse-rate (under the same standard conditions) of over 100 and under 120 per min. BMR +20 to +30. Moderate toxic symptoms or signs only. There were 70 cases in this class with 1 postoperative death.

Mild cases.—Those not reaching the standards listed above and exhibiting only mild signs or symptoms. There were no deaths in 40 cases of this type. One case of Riedel's thyroiditis with mild toxic signs is included in this category.

The effect of untreated thyrotoxicosis on the periods is summarised in table I.

From the figures it seems clear that in mild cases (and probably therefore in the early stages of the disease) there is no effect on the periods, but that as the condition progresses there is an increased tendency towards scanty and irregular periods, and finally more than half the severe cases develop amenorrhœa. Often, however, the periods are not in any way affected even in severe thyrotoxicosis. These findings agree with those of Joll.[3] Menorrhagia is uncommon; its occurrence only in the moderate group suggests that if it does appear it is of only short duration in the natural evolution of the disease, and is probably not a constant accompaniment.

Why thyrotoxicosis should cause oligomenorrhœa and amenorrhœa is not certain. Whether both conditions are due to some disordered secretion of thyrotropic and gonadotropic hormones of the pituitary has yet to be shown. Microscopic study of curettings from the uterus in these patients together with hormone analysis of the blood and urine should give some clue to the extent of activity in the ovaries and pituitary. Further research is needed on this problem. It did not seem profitable to pursue the study of dysmenorrhœa in these cases, because it seemed no commoner among them than it would be in a similar number of ordinary women.

RESULTS OF OPERATION

Accurate notes were available in only 79 cases. The possible after effects of operation are:

1. No alteration in the periods where these were formerly normal.
2. A return to normal after previous disturbance of the cycle—usually only after a latent interval of 3–4 months from the time of operation.
3. Abnormal periods of amenorrhœa persisting after operation.
4. Periods becoming abnormal after being formerly normal.

TABLE II—EFFECT OF THYROIDECTOMY ON MENSTRUATION

Group	Total	Menses			
		Normal throughout	Returned to normal	Abnormality persisted	Became abnormal
Severe ..	16	7	8	0	1*
Moderate	40	14	20	1	5†
Mild ..	23	19	2	1	1‡
Total ..	79	40	30	2	7

* Developed amenorrhœa.
† In 4 periods became irregular and scanty, 1 developed amenorrhœa. ‡ Developed menorrhagia.

The results in 79 cases are recorded in table II. From these relatively small numbers it seems that a woman with scanty or absent periods due to thyrotoxicosis has a 50% chance of her periods returning to normal after operation. Occasionally they may be made worse by operation and this is apparently commoner in less severe cases.

SUMMARY

Thyrotoxicosis, even when severe, may have no effect on menstruation. When it does affect menstruation it tends to produce first scanty periods and then amenorrhœa, which was present in over half the 29 severe cases in a series of 139.

Where the periods had become scanty or absent they returned to normal in about half the cases operated on.

Menorrhagia is uncommon in thyrotoxicosis and is probably transient when it does appear.

We wish to thank the Medical Officer of Health to the LCC for permission to publish this paper, and Dr. R. H. Swindells, medical superintendent of New End Hospital and members of the medical and surgical staff whose cases and notes have been used in preparing this paper.

1. Gardiner-Hill, H. and Smith, J. F. *J. Obstet. Gynæc.* 1927, **34**, 701.
2. Gardiner-Hill, H. *Quart. J. Med.* 1928–29, **22**, 207.
3. Joll, C. Diseases of the Thyroid Gland, London, 1932, p. 407.

DEHYDRATION OF FOODS.—A joint meeting will be held by the Nutrition Society and the Food Group of the Society of Chemical Industry at BMA House, Tavistock Square, London, W.C.1, on Saturday, July 25, at 11 A.M., when there will be a conference on the dehydration of foods and its effect on their nutritional value. A later meeting, probably at the end of October, will deal with trace elements in nutrition. Further particulars of the Nutrition Society may be had from the hon. secretary, Mr. Leslie Harris, DSc, Nutritional Laboratory, Milton Road, Cambridge.

SULPHANILAMIDE IN TREATMENT OF SMALLPOX

REVIEW OF 103 CASES

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FROM November, 1937, to July, 1938, Hong-Kong experienced the most severe epidemic of smallpox in its history. Approximately 2000 people died of the disease during this epidemic, which was characterised by a high percentage of toxic cases. Of the 810 victims of the disease admitted to hospital, 83, or just over 10% of the total series, were suffering from the toxic form.

Before attempting to assess the value of a drug or a line of treatment, it is necessary to know the natural history of the disease being treated. Smallpox is a clear-cut example of a diphasic disease, the two phases being the toxic and the focal phase, and it is unfortunate that the belief is widely held that the focal lesions are an essential part of the disease. In fact, this is not so. They are about as closely related to smallpox proper as is the adenitis seen in the second or third week of scarlet fever to essential scarlet fever. One has, therefore, in describing the effect of any drug on smallpox, to be at pains to state what type of the disease is being treated and at what stage treatment is begun.

The usual course of uncomplicated smallpox left to run its course untreated is as follows. An incubation period of about 12 days is followed by a sudden onset which is usually marked by a rigor or repeated rigors, fever, vomiting, nausea, backache and prostration. These symptoms are those of the toxic phase, and if the virulence of the causative virus be high all these symptoms are intensified and accompanied by the early appearance of hæmorrhage from the mucosæ and into the skin. In the severest cases of toxic smallpox these hæmorrhages dominate the clinical picture. As a rule, such patients reach hospital before focal lesions have had time to appear, and as death in this type of the disease usually occurs on or about the 6th day many patients die without showing focal lesions. The severity of the disease actually seems to retard the appearance of the focal lesions. In the less severe cases the symptoms of the toxic phase begin to abate about the third or fourth day from onset, and this alleviation of symptoms is accompanied by a fall in the fever and the appearance of the exanthem and enanthem, the focal lesions, characteristic of the focal phase of the disease. These lesions pass through a regular sequence—macule, papule, vesicle and pustule—and are mature about 8–10 days from the beginning of the focal phase. At this stage of the disease the patient often falls a ready prey to secondary septic infections, such as cellulitis, muscle abscess and extensive skin sloughing.

One more point must be emphasised: it is useless to try to gauge the effect of a remedy on the focal lesions unless the vaccinal history of the patient has been established beyond a peradventure. Vaccination exerts such a profound and long-lasting effect on both the number and type of the lesions that I have thought it wiser to exclude the vaccinated patients in this group from those in whom the influence of sulphanilamide on the lesions was being observed. It must be remembered that vaccinal modification influences the course of the disease in at least three ways—it greatly alters the course of the toxic phase; it lessens the total number of skin lesions; and it shortens and changes the natural maturation of these lesions. These three effects of vaccination die out at very different rates, the toxæmia-modifying component disappearing first, the number-modifying component next and the type-modifying component last. This is why toxic smallpox not uncommonly kills patients who have 6–8 well-foveated vaccinal scars, and it also explains those curious cases in which an extremely severe toxic phase is followed by a focal phase producing only 20–30 skin lesions. The toxæmia-modifying component of vaccination performed in infancy has completely disappeared, let us say, by the age of 20; the patient then develops smallpox and either dies in the toxic phase or survives to show only a few abortive lesions in the focal phase, the other two components still retaining some of their effect. These considerations have to be borne in mind both in the prognosis and the treatment of smallpox.

The effects of sulphanilamide on both phases of the disease were observed in a series of 103 cases. Selection, which was at first entirely random, later became specialised to this extent: if a patient on admission was obviously about to develop some secondary septic complication he tended to be given sulphanilamide because experience rapidly demonstrated that he would probably benefit from the exhibition of the drug.

ROUTINE TREATMENT

Sulphanilamide ('Streptocide' Evans) was given in a dosage of 1 g. four-hourly day and night with the necessary modifications for age when children were being treated. No loading dose was employed and the drug was invariably given in powder form by mouth. It was unnecessary to enforce any special dietetic restrictions as the Chinese have the sense to live on a decoction of sugar-cane in water when they are severely stricken with smallpox, and the less severely ill patients could not have obtained eggs and onions had they wanted them. Salines were not given to patients receiving the drug. All these patients, save those with toxic smallpox, had their skin lesions painted daily with a saturated solution of potassium permanganate, and their eyes, ears and nostrils treated with 10% 'Argyrol,' glycerin carbolic drops and liquid paraffin respectively, but apart from these no other measures were adopted.

RESULTS

Toxic phase.—Of the 83 toxic cases in the whole series only 2 survived, and both these men belonged to the very small group of toxic cases which has a fighting chance of survival. Neither of them had sulphanilamide. Of the 13 toxic cases treated with the drug, not one recovered; 10 of them were unvaccinated, 3 showed good vaccinal scars; 12 were admitted to hospital on or before the sixth day of the disease, the 13th on the seventh. On the average these patients were admitted on the fourth day of their illness, and they lived after admission for 3¼ days on the average. One man who had no vaccinal scars was exceptional in living for 16 days; he passed out of the toxic phase and seemed likely to recover, but finally succumbed to the pulmonary œdema which often ends the lives of those toxic patients who linger on.

Naturally, the shortness of the survival period after admission means that the drug had not long in which to act, but in no case was the natural course of the disease modified in the least by its exhibition, and it is noteworthy that the one man in this group who lived on for 16 days showed no signs of such modification as a result of treatment. It seems, then, judging by this small group of patients, that the drug exerts little if any influence on the toxic phase of the disease.

Focal phase, unvaccinated.—The remaining 90 patients in this series are divisible into two groups—41 who had been vaccinated and 49 who had not. The 49 unvaccinated patients afford reasonable material from which to draw conclusions about the influence of sulphanilamide on the focal lesions, as they comprised confluent, semi-confluent and discrete cases of the disease running an unmodified course. In only 19 of these patients was the evolution of the focal lesions changed, the change commonly seen being an arrest of the lesion at the vesicular stage. It closely resembled the horn-pock condition so often seen in well-modified smallpox. The vesicles, instead of developing into mature pustules, dried up and left the face covered with a multitude of small horny pocks. In these 19 cases the secondary focal or septic fever was either annulled or diminished. In the remaining 30 cases in this group the evolution of the lesions and the course of the disease remained unaffected.

Focal phase, vaccinated.—In this group of 41 patients sulphanilamide was used for some septic complication which had arisen during the course of the disease, the commonest being boils, muscle abscesses, skin sloughing, cellulitis and otitis media; the rarer ones, panophthalmitis, suppurative arthritis, suppurative periostitis and streptococcal infections of the genito-urinary tract. It is in these complications of the focal phase that sulphanilamide proves most useful, and treatment with the drug was not begun in these cases until some septic complica-

tion had appeared. Adjuvant measures such as local antiseptic dressings were used once drainage of the muscle abscesses had been established, but there is no question that these cases recovered much more rapidly when treated with sulphanilamide in the way described than when left alone. It was the rule, once the necessary local measures had been taken in these cases of boils, muscle abscess and cellulitis, for recovery to be prompt and uninterrupted provided an adequate dosage of sulphanilamide was employed. The most dramatic results were seen in the cases complicated by extensive skin sloughing and genito-urinary infections. The following cases illustrate the effect of the drug.

A Chinese woman, aged 47, suffering from a mild attack of discrete unmodified smallpox. She came into hospital when her lesions were vesicular, maturation and crusting followed the normal course and no special treatment was adopted. Ten days after admission, when her lesions were still crusted, she had several rigors in the afternoon; for the next two days she continued to have three or four rigors a day, and her fever which had abated rose to 104° F. during them. There were no obvious signs to account for these rigors and the irregular fever, but she finally complained of a "burning and discomfort" on micturition. A hæmolytic streptococcus was grown from a catheter specimen of her urine and the exhibition of sulphanilamide brought about a prompt remission of symptoms and an uninterrupted recovery.

A Chinese boy, aged 9 years, admitted to hospital at the vesicular stage of an unmodified attack of discrete smallpox. He was not dangerously ill, and as the disease was running its normal course he was left alone. A week after admission his face became œdematous and he complained of giddiness, headache and fever. Generalised anasarca developed rapidly, and his urine was reduced to 6 oz. in the twenty-four hours and was smoky in colour. A clean specimen yielded a growth of hæmolytic streptococci. The exhibition of sulphanilamide produced a remission of fever and symptoms within twelve hours, and from then on recovery was uneventful.

A Chinese, aged 34, admitted on the sixth day of a severe attack of confluent smallpox. He had been variolated by the nasal route when a child of 3 years, and had "taken." At the height of maturation he developed extensive sloughing of the skin over the 4th, 5th and 6th ribs on the posterior aspect of the left hemithorax. His secondary fever continued to increase and the skin over the whole of the left flank rapidly became œdematous. Sulphanilamide was begun at this stage in the routine dosage and immediately checked the tendency of the sloughs to spread. Eventually the man made a complete recovery after 100 days in hospital and a severe complicating attack of beriberi.

Whole series.—The figures for the three groups are as follows:

	Toxic	Focal Phase Unvaccinated	Vaccinated
Cases treated	13	49	41
Deaths	13	11	2
Fatality %	100	22·4	4·8

Of the unvaccinated patients in the second group who died, 2 were women in the puerperium and 6 were young children. The 2 deaths in the vaccinated group were due to confluent smallpox. The fatality for the whole series during this epidemic was 44%, and there is no doubt that sulphanilamide lowers the mortality in the septic confluent cases and in those cases showing some septic complication but as it is impossible to give the proportion of vaccinated to unvaccinated patients in the whole series it would be unwise to stress the comparison between the treated and untreated groups.

DISCUSSION

Certain points can be made from the results obtained in this group of 103 patients. First the toxic phase of smallpox is not influenced by sulphanilamide in the dose given, 6 g. in the twenty-four hours; second, the focal phase does appear to be modified in a certain number of unvaccinated patients in the sense that the normal evolution of the lesions is arrested at the vesiculo-pustular stage with a resulting diminution or suppression of the secondary or focal fever; third, the septic complications which occur so frequently in the focal phase are profoundly influenced by this drug. In treating the common septic complication of this phase sulphanilamide is extremely valuable and on occasion does undoubtedly save life. In muscle abscess, cellulitis, suppurative periostitis, suppurative arthritis, streptococcal renal infections, otitis media and panophthalmitis it has acted rapidly, and I think the real value of the drug in smallpox is in the treatment of these septic complications.

More might have been expected from the use of sulphanilamide in the focal phase of unvaccinated cases, but these observations tend to show that the drug cannot be relied on to abort or to influence the focal lesions. The organisms found in the pus of smallpox are usually either a hæmolytic streptococcus or a staphylococcus, and in the majority of these cases where a bacteriological examination was possible a streptococcus was isolated. Therefore the drug should have produced an observable effect in more than 19 out of 49 unvaccinated patients, but it is a disappointing fact that a number of the unvaccinated confluents showed no response.

These findings tally with what we know thus far of the action of the sulphonamide group, and they also agree, in the main, with the observations of others who have treated smallpox with the sulphonamides.

Buttle, in reviewing the action of the then known members of the sulphonamide group in 1939, pointed out that only two virus diseases—trachoma and lymphogranuloma inguinale—were influenced by them, and it has since become clear that the virus phase of smallpox remains completely unaffected by them. The earliest report on their use in the treatment of smallpox seems to be that of King and Rozario in 1938. A European woman, aged 33, who had been vaccinated in infancy, was given sulphamidochrysoidin ('Prontosil rubrum') by mouth from the vesicular stage onwards, and the drug was thought to have lessened the number of pustules and prevented the secondary fever.

In 1940 McCammon treated 4 cases of the disease with sulphanilamide and claimed that 3 of them showed merely an evanescent macular rash, while the fourth developed three pustules only. He makes no mention of the vaccinal history of any of these patients, and the conclusion drawn, that sulphanilamide is beneficial if given early in smallpox, does not seem to be entirely justified. Fitzgerald Moore, writing in the same year, stressed the need for caution in assessing the results of sulphonamide therapy in smallpox, and mentioned that he had treated 6 confluent cases with sulphanilamide during a Nigerian epidemic with a fatality of 100%.

In March, 1940, Pierna described the results he had obtained in two different epidemics which occurred in Spain after the war. His report is based on 7 cases only and in most of them sulphanilamide treatment was begun in the vesiculo-pustular stage. The dosage and route of administration employed are not described, but the drug when "given to subacute, acute and confluent cases produced early improvement in the general condition of the patients, subsidence of fever and cessation of growth of the lesions." The vesicles became converted into attenuated pustules which dried up in 4–5 days, with subsequent shedding of the crusts in another 4–6 days. No complications were observed in the cases treated with sulphanilamide, and Pierna concluded that the drug "reduces the period of evolution of the lesions to less than half the normal, that it attenuates the smallpox virus and that it is to be regarded as specific in the treatment of smallpox."

In December, 1940, Patel and Haidu published a valuable review of the results obtained by them in Bombay in the 1938 and 1939 epidemics. They treated selected cases of the septic confluent type with oral sulphanilamide, 'Uleron' and sulphapyridine, and found that sulphanilamide appeared to be the most effective of the three. Uleron seemed to be definitely toxic in the doses they employed and sulphapyridine did not abort the focal phase. Further trials were made with sulphanilamide, and between January and May, 1940, 91 cases of semi-confluent smallpox were treated with the drug with 64 controls, and 60 confluent cases with 63 controls. These patients were divided into vaccinated and unvaccinated groups, and in both sulphanilamide appeared to bring about a significant drop in mortality. The sulphanilamide was given by mouth in a dose of 1 g. four-hourly for the first week, and in half that dose during the second week. Untoward effects were uncommon. They concluded that sulphanilamide was the drug of choice for the treatment of smallpox, that it reduced the mortality in confluent cases by about 30%, and that it only seemed to influence septic cases.

Early in 1941 Patel also reported the results in 19 confluent cases treated with sulphapyridine. The drug given early in the focal phase did not abort the lesions but did seem to avert complications; 5 g. daily was given for the first four days

and then a smaller dose, until a total of 26·5 g. had been reached.

Chatterjee recorded his experience with sulphanilamide ('Sulphonamide-P') in smallpox in March, 1941. Although he treated only 24 cases of confluent and hæmorrhagic smallpox with the drug, he was satisfied that it was useless in the hæmorrhagic cases but effective in modifying the evolution of the lesions and preventing septic complications. Chakrabarty and Ghosh also reported isolated cases of the disease successfully treated with sulphanilamide and sulphapyridine later in the year.

Chari in 1942 published a detailed description of the results in 97 cases of smallpox treated with sulphapyridine, sulphanilamide and urea sulphazide. All types of the disease were represented in his series. His fatality-rates were 24·4% in the unvaccinated patients, 3·7% in the vaccinated ones. He concluded that a "sulphonamide" does not abort the disease or do away with the pustular stage even if given earlier; that it is a necessary and valuable drug in the pustular stage of the disease, both for lessening the evil effects of sepsis in the acute stage and for preventing the incidence of late septic manifestations; that it lessens mortality and that it minimises the disfigurement incident to the disease." He is also convinced that sulphapyridine is the most useful drug of the group in this disease.

This brief review of the published work shows that all observers are agreed on two points: first, that the sulphonamides exert no influence on the virus of smallpox, and therefore do nothing to modify the toxic phase of the disease; second, that they are of very great value in the treatment of the septic complications so common in the focal phase. Whether they can or cannot abort the evolution of lesions is still a moot point though the consensus of opinion is that they cannot. There is also general agreement that the sulphonamides, used in the septic confluent cases and in the septic complications, bring about a reduction of mortality. Most observers consider that their use helps in reducing the incidence of septic complications during the focal phase.

At the moment, it is safe to say that the sulphonamides may be given with advantage during the focal phase of smallpox, but that they have no influence on the toxic phase.

SUMMARY

A review is given of 103 cases of smallpox treated with sulphanilamide by mouth.

The drug appears to be without effect on the toxic phase of the disease—that is to say, it has no action on the virus of smallpox.

It is capable in a certain number of cases of modifying the skin lesions rather as they are modified by vaccination.

It is extremely effective in the treatment of many of the complications associated with the focal phase.

There is some evidence that the drug, if given early in the focal phase, may modify the number of the lesions, the incidence of septic complications and the degree of subsequent scarring.

The drug reduces the fatality among cases showing septic complications.

REFERENCES

Buttle, G. A. H. (1939) *Trans. R. Soc. trop. Med. Hyg.* **33**, 40.
Chakrabarty, N. G. (1941) *Indian. med. Gaz.* **76**, 220.
Chari, N. N. (1942) *Ibid*, **77**, 91.
Ghosh, F. K. (1941) *Ibid.*
King, C. and Rozario, K. A. (1938) *Jour. R. Army med. Cps*, **71**, 404.
McCammon, W. O. (1939) *J. Amer. med. Ass.* **112**, 1936.
Moore, D. F. (1939) *Trans. R. Soc. trop. Med. Hyg.* **33**, 40.
Patel, T. B. and Haidu, B. F. B. (1940) *Indian med. Gaz.* **75**, 73.
Pierna, S. (1940) see *J. Amer. med. Ass.* **114**, 931.
Wilkinson, P. B. (1940) *Caduceus*, **19**, 103.

NATIONAL BIRTHDAY TRUST FUND.—At the annual general meeting of the fund Sir Julien Cahn, the chairman, said that though activities had been curtailed by the war they continued to maintain the headquarters at 57, Lower Belgrave Street, providing accommodation for the Queen's Institute of District Nursing and the College of Midwives. The analgesics appeal fund had supplied 50 gas-and-air machines free to hospitals, and 46 at a nominal charge, 36 of these to district nursing associations. The fund had also supplied 48 machines to EMS hospitals. The human milk bureau at Queen Charlotte's Hospital was now supplying 48 hospitals all over the country.

QUALITY OF THE NATIONAL LOAF

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WITH the appearance of the national loaf (85% extraction) on the market and its subsequent establishment as the nation's bread in April of this year, the question of a simple method of checking the quality of flour and bread has taken on added importance. The properties to be aimed at in the national wheatmeal flour have been set out in the memoranda of the Medical Research Council.[1] It should be of 85% extraction and contain as much as possible of the germ and aleurone layer to supply maximum amounts of the B vitamins and of protein of high biological value, and as little of the bran as possible; this last is the most indigestible and least nutritious part of the wheat and imparts the colour, flavour and texture of "wholemeal" preferred by some but disliked by a large proportion of the population. One of the objects of restricting the bran to the minimum and recommending an upper limit for the amount of "crude fibre" appears to be to provide a flour which would still be suitable for those for whom a low residue diet has been prescribed.

The ash content has hitherto been widely used as the criterion in milling studies on flour, but it is not satisfactory for application to national flour since the ash contents of the germ, aleurone layer and bran are all high [2] and differ but slightly and they therefore give no information as to whether the flour contains the undesirable bran or the highly nutritious fine weatings and germ; furthermore, it could not be applied to bread. The crude fibre content is a better criterion and was used in the small survey described below, the aim of which was to gain some idea of how far the fibre content of the national loaf, as sold, conformed with the recommendation of an upper limit of 0·9%, on a 15% moisture basis, for the national flour.

METHOD AND FINDINGS

About twenty samples of the national loaf were obtained from towns widely distributed throughout the country by members of the Association of Scientific Workers and the Children's Nutrition Council and others, to whom we wish to record our thanks. It was requested that one thick slice be sent from loaves bought over the counter. The samples were received between Feb. 15 and March 15. The crust was removed and the crumb air-dried overnight, at room temperature, after which it was ground in a coffee mill three times.

Two-gramme samples of the dry breadcrumbs were used for the crude-fibre determinations which were carried out by the method of the American Agricultural Chemists,[3] which is also the method used by the American Association of Cereal Chemists [4] for this type of material. This method was checked by determining the crude-fibre content of a few samples not included in the survey by this and by the official method used for feeding-stuffs in this country.[5] There was satisfactory agreement between the results of the two methods, in both of which the ether extraction was omitted as unnecessary for bread. Each sample was analysed by two workers who each made two estimations. The moisture content was determined by heating separate weighed samples for four hours at 110° C., and the crude-fibre results were calculated to a 15% moisture basis for comparison with the values for flour. The results are presented in the table.

Of the seventeen samples, the values for 10 were within the crude-fibre limit recommended by the Medical Research Council, 5 were slightly above and 2 exceeded it by a large amount. These 2 certainly, and the other 5 probably, contained a large percentage of coarse bran at the expense of the more desirable fractions of the

1. See *Lancet*, 1941, i, 703.
2. Booth, R. G., Carter, R. H., Jones, C. R. and Moran, T. *Chem. & Ind.* 1941, **60**, 903.
3. Official and Tentative Methods of Analysis of the Association of Official Agricultural Chemists, Washington, D.C., 1935.
4. American Association of Cereal Chemists. Cereal Laboratory Methods, 1941.
5. Fertilisers and Feeding Stuffs Regulations. Statutory Rules and Orders, 1932, No. 658.

Town	Results of analyses			Average
	Analyst 1	Analyst 2	Analyst 3	
Cambridge..	0·97, 0·95	..	1·06, 0·98	0·99
Cleckheaton	0·94, 1·07	0·96, 0·99	1·00, 0·93	0·98
Coventry ..	0·83, 0·76	..	0·83, 0·87	0·82
Edinburgh 1	..	1·34, 1·38	1·14, 1·29	1·28
,, 2	0·77, 0·71	..	0·81, 0·77	0·76
,, 3	..	0·67, 0·72	0·73, 0·73	0·71
,, 4	0·64, 0·72	0·60, 0·54	..	0·63
Greenfield ..	0·66, 0·65	..	0·58, 0·57	0·62
Harrow ..	0·84, 0·77	0·62, 0·66	..	0·72
Kenilworth	1·08, 1·06	..	1·06, 1·09	1·07
Keighley ..	1·60, 1·77	1·60, 1·60	..	1·64
Lincoln ..	0·85, 0·87	..	0·87, 0·82	0·85
Manchester	0·96, 0·84	..	0·92, 0·87	0·90
Oxford ..	0·92, 0·91	0·75, 0·79	..	0·85
Penrith ..	0·75, 0·74	0·84, 0·75	..	0·77
Sheffield ..	0·82, 0·89	..	0·82, 0·76	0·82
West Kirby	..	1·08, 1·00	1·08, 1·10	1·06

wheat berry. The source of the flours used for baking the bread was unknown in many of the samples analysed, for in large bakers' shops this information is not always readily obtainable.

These results, although obtained on bread and by a different method, agree in the main with the survey of flours made by the Research Association of British Flour Millers, who found that the crude-fibre content of 47 out of 303 samples exceeded 0·9%.[6] Thus shortly before the national loaf became compulsory a small but far from negligible proportion of millers were supplying a product which did not achieve the Medical Research Council's aim of supplying the maximum nutritive value and palatability with the minimum amount of coarse material liable to cause digestive troubles.

Since March, when these samples were collected, there has been time for the millers to get more used to producing the national flour, and its quality has possibly improved. Since a straight-run flour of 85% extraction has a lower crude-fibre content than the reconstituted flour,[1] it might be possible, if millers would produce the former type, to reduce the upper limit in the specification of crude-fibre content and thereby ensure for us a national flour of still higher nutritive value and acceptability. In any case, a check on the quality of the national loaf, such as the fragmentary one here described, should be in constant operation, though this will be inapplicable while it is permitted to mix up to 25% white flour with the national flour.

We wish to thank the Biochemical Laboratory and the Field Laboratories, Cambridge, for facilities for carrying out this work.

6. *Nature, Lond.* 1942, **149**, 460.

Reviews of Books

A Practical Method of Self-analysis

E. PICKWORTH FARROW, M.A., D.Sc. London: George Allen and Unwin. Pp. 153. 6*s*.

IT is sometimes said that Freud, who created psycho-analysis, was never psycho-analysed. This is, of course, an error; he analysed himself, and since then others like Roheim have done likewise. An English exponent of the method, Dr. Farrow, now explains how beneficial he found it, after two abortive attempts to submit to the more conventional procedure. Professor Freud, in a foreword, describes him as "a man of strong and independent intelligence, who, probably on account of a certain wilfulness of character, could not get on well with the two analysts with whom he experimented." The matter could not be put more simply, and the qualities referred to by Freud are manifest in the book. It is readable, but on many points out of touch with modern psycho-analytic teaching. When the author says, for example, that he prefers to describe "oral erotism" simply as "hunger" he is by implication attacking the edifice at its base: this comes about through his very personal approach and reliance on his own experience, which makes him at once biased and independent. His experience is intensive; he tells us that the book is the outcome of 2800 hours, spread over 18 years, and of more than twelve million words of free association, which he was accustomed to record systematically. The book is fresher and more stimulating than orthodox psycho-analytic manuals.

Roentgen Treatment of Infections

JAMES F. KELLY, M.D., F.A.C.R., professor of radiology, Creighton University; with the collaboration of D. ARNOLD DOWELL, M.D., assistant professor of radiology in the university. Chicago: Year Book Publishers; London: H. K. Lewis. Pp. 432. 33*s*.

THIS book fills a gap in medical literature. Its authors recognise the importance of X-ray treatment of the infections and have put together for the first time in book form the fruits of their own experience and that of many others. The first part of the book deals with physical and biological considerations and here their guidance is less sure. Their reference to protection, for instance, runs: "All sources of secondary radiation should be ascertained and adequate means of protection provided so far as it is possible to do so"; and under the heading "Training not always necessary for success," they state that infections "may be treated by any physician familiar with the operation of X-ray apparatus, the definition of an r unit, and the disease he is treating"—an odd statement in itself, and a dangerous one in its implications (the definition of the roentgen given in the text is not that which has now been accepted internationally). The second part of the book deals with the treatment of peritonitis, parotitis, pneumonia and other infections, the main section being an informative account of the treatment of gas gangrene of which the authors were the pioneers. They make a good case for the further investigation of this type of treatment, though many of their assertions are controversial. They rightly stress the value of X-ray treatment in postoperative parotitis and similar infections in which this method of treatment deserves further trial. Probably a portable X-ray therapy plant for the treatment of infections will one day form a recognised part of the equipment of all large general hospitals.

The Injured Back and its Treatment

Editor: JOHN D. ELLIS, M.D. London: Baillière, Tindall and Cox. Pp. 377. 30*s*.

THIS collection of nine papers by eminent American orthopædists deals with the common minor injuries as well as the more serious fractures and dislocations, with and without cord involvement. The views expressed are orthodox and set out clearly. A chapter on backache as a symptom of visceral disease might have been more at home in a less practical manual but is welcome all the same. Proper stress is laid on a systematic examination of the back; after reading this chapter most doctors will feel that their previous efforts have been somewhat sketchy, and that there is much more to be learned from a complete examination than they had realised. The rôle of the articular facets in causing back pain is discussed—a syndrome which has not yet received much notice in this country but one described as being fairly common. The editor has minimised overlap and maintained continuity; there are no significant omissions.

Synopsis of Blood Diseases

A. PINEY, M.D. Birm., M.R.C.P., physician to St. Mary's Hospital for Women and Children, Plaistow. London: Wm. Heinemann (Medical Books). Pp. 120. 10*s*. 6*d*.

Dr. Piney presents an up-to-date summary of our knowledge of blood diseases without going into detail about the changes in the blood-picture. It will be especially useful to the postgraduate student with an adequate background who wants to revise the subject quickly, but it is probably too sketchy to help the general practitioner without such a background. The main difficulty in blood diseases is differential diagnosis and for this a more detailed description of the results of hæmatological examination than Dr. Piney gives is needed. The treatments advocated are on sound and balanced lines and reflect modern practice, though the use of fortified liver extract occurs in several unexpected places. The four colour plates illustrate blood and bone-marrow cells in a rather unconventional way that is hardly convincing and are unlikely to help the average physician for whom the book is intended; the same must be said of the extensive tables of the characteristics of the various types of cells. Nevertheless this book will have its place as a quick "brush-up your blood diseases."

In Pruritus Ani,[1] Anal Fissure,[1] Pruritus Vulvæ,[1] and Lower Abdominal Pains originating from the Cervix Uteri[2]

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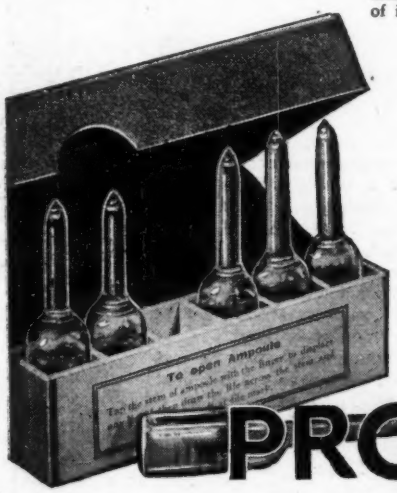

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[1] *British Medical Journal*, 1935, November 16th, p. 938.
[2] *British Medical Journal*, 1938, January 15th, p. 105.

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THE LANCET

LONDON: SATURDAY, JULY 18, 1942

SOCIAL FACTORS IN ACUTE RHEUMATISM

THE causa causans of acute rheumatism is unknown; the rôle of the hæmolytic streptococcus and of the virus are still not clearly defined. But, as RYLE insisted last week, preoccupation with the microscopic organism should not lead to neglect of the "multiple factors" in production of disease. It has long been recognised, on clinical grounds, that acute rheumatism is to a large extent a disease of the poorer classes, though it has proved difficult for clinical investigation alone to draw any clear-cut conclusions on the relation that poverty was to it. The Registrar-General's reports, however, offer material for the statistical approach to diseases in which social factors are believed to play a part. As members of the Committee for the Study of Social Medicine, MORRIS and TITMUSS have investigated the problem of acute rheumatism by analysing the figures given in these reports and their deductions will be found on our opening page. Poverty as a causative factor has often been stressed in the past, and attempts have been made to dissect the responsible components in the "complex of poverty." It has been shown that in families removed from poor surroundings the incidence of acute rheumatism is reduced. MORRIS and TITMUSS now show that acute rheumatism and rheumatic heart disease must indeed be classed with high infantile mortality and a high incidence of pulmonary tuberculosis as ills bred by poverty.

Deaths from acute rheumatic fever are few, but deaths from heart disease in young adult life are many. Rheumatism thus ranks with tuberculosis as an outstanding cause of invalidism and as one of the major killing diseases in this period of life. It has often been suggested in the past that acute rheumatism affected the artisan class more than any other large group in the population, even the very poor. Analysis of mortality from valvular heart disease by social class shows, however, a consistent rise of mortality with deepening poverty. MORRIS and TITMUSS find no evidence to suggest that the selective incidence of acute rheumatism is influenced by any factor apart from those associated with poverty. As with other social diseases, the mortality from rheumatic heart disease is higher in poverty-stricken areas. Roughly speaking it rises with increasing density of population, but the mortality is significantly higher in the poverty-stricken villages of South Wales than in any of the large towns. Urbanisation thus contributes to the death-rate but plays a secondary rôle to poverty itself. Climate is at most of minor importance. Analysis provided no clear evidence that overcrowding increased mortality from rheumatic heart disease, though it has been clearly shown to increase mortality from pulmonary tuberculosis. A possible interpretation of this remarkable discrepancy is that acute rheumatism does not spread by droplet infection; poverty would then play its part only after infection has been acquired. Statistical analysis may thus have provided a clue to the way in which the disease is transmitted that should be looked into.

Since they are the outcome of poverty, acute rheumatism and rheumatic heart disease must be regarded as preventable. Whether rheumatism is caused by a streptococcus or a virus, whether heredity plays a part or not, the mortality and invalidism from the disease will fall as soon as the load of poverty is lightened. This is one aspect of a many-sided problem which confronts the new advisory committee, appointed on June 30, whose joint secretaries are Mr. NORMAN CAPENER (British Orthopædic Association) and Sir FRANK FOX (Empire Rheumatism Council). Perhaps, too, the social and preventive medicine committee of the Royal College of Physicians, also formed recently, will consider this question.

INCOMPATIBILITIES OF SULPHONAMIDES

IN the early days of sulphonamide therapy severe cyanosis was the most alarming of the toxic effects. It was soon recognised, however, that the outlook in these cases was rarely as black as it seemed when taken at face value, and indeed most practitioners disregarded cyanosis in determining the effective dose of the drug. COLEBROOK and KENNY [1] showed that the cyanosis was due to methæmoglobin, or more rarely sulphæmoglobin, in the blood. These changes in the blood pigments are representative of a biological mechanism previously described by SNAPPER [2] and VAN DEN BERGH.[3] In the presence of oxygen sulphæmoglobin can be formed in the blood-stream from sulphide absorbed from the bowel; and sulphanilamide is only one of many drugs which facilitate this reaction by acting as catalysts. The danger of sulphonamide cyanosis arises from the immobilisation of the body's oxygen carrier. Methæmoglobin in the blood is comparatively benign, for it can revert to hæmoglobin spontaneously in the course of a few days and much more rapidly after the administration of methylene-blue. Sulphæmoglobin, on the other hand, is more stable and remains unchanged in the erythrocytes until these are destroyed, which may be a matter of 4 months or so. Furthermore, the cyanosis due to sulphæmoglobin is unaffected by methylene-blue. Earlier workers were often puzzled by the occasional occurrence of sulphonamide cyanosis without spectroscopically demonstrable changes in the blood. That this discrepancy originated in faulty technique seems probable from the investigations of CAMPBELL and MORGAN,[4] who emphasised the necessity for laking the blood with only a small volume of water and making the spectroscopic examination soon after the withdrawal. The present infrequency of gross cyanosis due to sulphonamide therapy as compared with 5 or 6 years ago may, however, be partly explained by chemical differences between 'Prontosil rubrum' and the sulphonamides now in common use.

The absorption of sulphuretted hydrogen is said to be favoured by the use of saline purgatives which enhance bacterial activity by keeping the fæces in the fluid state, but this hypothesis does not bear close scrutiny. In man, at any rate, only the contents of the colon are likely to undergo any considerable alteration in consistence, for above the ileocæcal valve

1. Colebrook, L. and Kenny, M. *Lancet*, 1936, i, 1279.
2. Snapper, I. *Ned. Tijdschr. Geneesk.* 1922, **66**, 2341.
3. van den Bergh, A. A. H. and Wieringa, H. *J. Physiol.* 1924-25, **59**, 407.
4. Campbell, D. and Morgan, T. N. *Lancet*, 1939, ii, 123.

the fæces are fluid. Thus, only a small part of the alimentary canal is affected. Again, if the amount of water in the bowel increases owing to the action of the saline purgative in preventing absorption, sulphuretted hydrogen, which is fairly soluble in water, will tend to remain in solution in the bowel rather than pass through the intestinal mucosa. Another point which is often overlooked is the importance of the speed of action of the saline purgatives when properly administered. If the bowel is "emptied" by a process equivalent to lavage, and the procedure is completed within an hour, it is reasonable to suppose that there will be a greatly reduced opportunity for the absorption of sulphides or anything else until the cataract has abated. It may be objected that all this is speculative, but is it more speculative than the reasons which were once supposed to justify the prohibition of sulphur-containing foods? Scepticism over the importance of such foodstuffs in the pathogenesis of sulphonamide cyanosis is borne out by NIBLOCK,[5] who gave a diet containing eggs, onions and other foods having a high proportion of combined sulphur to 100 patients receiving sulphonamides. Spectroscopic examination failed to reveal methæmoglobin or sulphæmoglobin in the blood. Again, SMITH[6] has shown that sulphapyridine can be given without fear of toxic effects to patients who have received intravenous injections of 'Pentothal sodium,' despite the fact that this compound contains 12% of sulphur. Observations of this kind[7] are to be set against laboratory experiments in which diets and doses bear little relationship to the problem confronting the practitioner. There seems no doubt[4] that the administration of sulphur in the uncombined state does produce methæmoglobin (and occasionally sulphæmoglobin) in a certain proportion of patients receiving sulphonamides, but now that confection of sulphur is among the forbidden fruits of the pharmacopœia few practitioners are likely to use this drug as a laxative.

Recent work suggests that the sulphonamides should be avoided when quinine is being given. NIBLOCK[5] observed that in 6 patients treated with quinine and sulphonamides simultaneously vomiting occurred in every case and recovery was slower than was expected. Pharmacological confirmation of this clinical observation comes from HARNED and COLE,[8] who have shown that in rats receiving sulphapyridine and quinine the absorption of the sulphonamide is increased on the average by 44%, and there is a corresponding rise in the amount of acetyl-sulphapyridine in the urine. The largest dose of quinine given almost doubled the output of acetyl-sulphapyridine. They found no corresponding rise in the volume of urine secreted during these experiments, and this curious effect of quinine must therefore increase the risk of deposition of crystals in the kidney tubules. It would be interesting to know whether sulphonamide-quinine therapy in the human subject produces impairment of renal function, for NIBLOCK's observations taken with those of HARNED and COLE raise the possibility that this combination of drugs may produce uræmic symptoms. When mepacrine hydrochloride ('Atebrin') was substituted for quinine in the experiments on rats the alterations in absorption and excretion of sulphapyridine were not observed. In this country the occasions when sulphonamides and quinine are used together for combined malarial and bacterial infections must be rare. But in tropical and subtropical countries this incompatibility will have to be borne in mind.

5. Niblock, W. McN. *Indian med. Gaz.* 1941, 76, 449.
6. Smith, E. J. R. *Brit. med. J.* 1940, ii, 488.
7. See also *Lancet*, 1941, i, 824.
8. Harned, B. K. and Cole, V. V. *J. Pharmacol.* 1942, 74, 42.

THE FUTURE OF THE SCHOOL CANTEEN

THE numbers of children taking dinners in school, according to J. Alison Glover,[1] should reach a million by September of this year; but hopes that school meals on a large or even universal scale have come to stay must depend ultimately on what the children think of them. In an inquiry[2] undertaken by F. Le Gros Clark for the education committee of a home county, the children's views have been directly canvassed. Lest there should be any element of posing for the camera in their replies, the subject was set as an ordinary class essay, and the children were told nothing about the inquiry. The Hertfordshire schools which took part represented every type of urban and rural district, and the first 600 essays were drawn without selection from the first 19 schools, and analysed.

Answers were most spontaneous and frank from children between 9 and 11; the 13 and 14-year-olds were more consciously concerned with the technique of composition; but most of them expressed an honest preference, one way or the other, for school or home meals. About 31% of the boys and 35% of the girls favour school meals; 45% of boys and 41% of girls favour home meals; the rest were doubtful, indifferent, or did not state their preference. At first sight it appears disappointing that a larger number prefer home meals, but when the reasons for this preference are considered it becomes clear that many objections could be overcome by better management of school feeding. That many of the bigger boys complain of leaving the table hungry is a complaint which calls for obvious and immediate remedy. The adolescent appetite always has to be seen to be believed, and the lad who wrote "a boy of fifteen eats a man's dinner" was probably underestimating, if not his own needs, at least his own capacity. Those who complained that the helpings were all the same size, and that the little ones got as much as the big ones admitted reasonably enough that as everyone paid 4*d*. this lack of discrimination was fair; but they were still hungry. At home, no doubt, they would make out on hunks of bread, but the schools, in an effort to provide a properly balanced meal within an economic framework, are presumably hard put to it to give them enough. King Solomon, when he failed to satisfy the hunger of the sea-monster, fell on his face with shame and gave up trying. The schools will have to exceed the wisdom of Solomon by finding a way to fill their voracious young diners. Many children objected to crowding and noise; and some points seemed to be lack of drinking water on the tables in some schools, and rules against talking at meals in others. These all clearly spring from administrative difficulties which the staff have not yet had the accommodation, equipment or imagination to overcome. Clean and comfortable dining-

1. See *Lancet*, July 11, 47.
2. "The School Child and the School Canteen." Published by the Hertfordshire County Council.

rooms and the chance to talk with friends have as much weight with children as with their seniors. Indeed many of those who preferred school meals mentioned the conversation of friends as the chief attraction. Other objections were mainly trifling; the food faddist spoke feelingly of mother: "If she knows her child can't possibly eat a certain kind of food without feeling ill, she can excuse her child and so her child feels quite happy. There are many things I do not like such as fat on meat, tapioca, stews and many others . . ." Several seemed nervous about their table manners, but in one case at least custom set these doubts at rest: "The first few times I thought I would much rather have my dinner at home for no apparent reason now that I look back except that I was rather nervous of eating in front of strangers." Some preferred the company of their family to that of their friends, and some disliked the routine of school meals; to one, indeed, it seemed an advantage that home dinner was eaten when it was ready and not at a fixed time. One emphasised that at home he had enough time to wash properly before dinner, and that he could use his own towel.

On the positive side were liking for school fare, and relief for some children from a long and tiring walk or from the alternative of a packet lunch. Many of the older children realised that school meals spared their mothers, and that the food was chosen with thought for their own health and development. Schools which grew their own vegetables took pride in the quality of the results, but school gardens were only occasionally mentioned, which suggests that this aspect of school feeding might be developed further. As Le Gros Clark points out, these children are still getting accustomed to the idea of school meals. If the early stages are well managed they will take the system for granted when their own children are going to school. This intelligent survey gives many clear leads to the ways in which the present practice can be established as a custom; and once it achieves that status in England it becomes sacrosanct.

Annotations

ABIOTROPHIES OF RETINA AND CHOROID

THE cause of retinitis pigmentosa is not settled. It was thought by some to be due to a failure of the blood-supply to the rods and cones—perhaps owing to choroidal sclerosis. In support of this view were the following facts: first, the disease starts at the equator of the eye, where the blood-supply to the outer layers of the retina is at its poorest, being the junction of the areas supplied by the long and short ciliary arteries. Secondly, Wagemann in 1890 found that experimental section of the ciliary arteries in rabbits produced pigmentary changes in the retina, though confirmation of this work has not been forthcoming. On the other hand, it has been pointed out that atrophy of the choroid owing to prolonged pressure in glaucoma does not produce pigmentary changes in the retina. Latterly there is more support for the view that the condition is an abiotrophic change in the neuro-epithelium. The term abiotrophy was introduced by Gowers in 1902 to mean a want of durability of the tissues. It was not essential that this change should be hereditary, but in fact it was often found to be so. Gowers drew attention to Leber's optic atrophy as an example of this condition, and later Collins and Leber included retinitis pigmentosa also. The hereditary tendency was extensively worked out by Nettleship in 1907, who traced the disease in 976 families, in one instance following it back through the generations to a soldier who fell on the field of Waterloo. Now Sorsby[1] has published records of the disease, and also of choroidal sclerosis and macular dystrophy, in which the hereditary and familial tendencies seem beyond doubt. These two latter conditions have not yet had their pedigrees followed up to the same extent as has retinitis pigmentosa; if the same rules apply, then it would appear that they can occur as dominant, recessive or sex-linked traits.

1. Sorsby, A. *Irish J. med. Sci.* November, 1941.

BLOOD REGENERATION IN DONORS

DURING the last three years, blood donors the world over have been bled on an unprecedented scale, and it is remarkable that there have been so few reports on the effect of the blood loss. The experience of most of those who have to do with the welfare of donors seems to have been that the removal of an amount of blood not exceeding 420 c.cm. at six-monthly intervals from adults in ordinary health is not in any way detrimental to their well-being. Opinions differ as to the advisability of bleeding at three-monthly intervals or less under war conditions. Fowler and Barer[1] of Iowa city have studied blood regeneration in 200 subjects, mostly young men working in hospitals. The average drop in hæmoglobin after the withdrawal of 500–600 c.cm. was 2·3 g. per 100 c.cm. or 18%. The average time taken by 105 subjects to make good their blood loss was 49·6 days, the longest being 98 and the shortest 18 days. At the end of eight weeks only 74% had made good their loss. There was little appreciable difference in a smaller series where the same amount of blood was removed in two fractions on consecutive days. In general the slower rates of recovery were in those who showed the greatest fall in hæmoglobin; the initial hæmoglobin level did not appear to be a significant factor in the rapidity of regeneration. Unonius and Schroder,[2] however, found that those with a high hæmoglobin returned to normal more quickly than those with moderate or low hæmoglobin levels. Fowler and Barer were only able to observe seven subjects who gave 300 c.cm.; their recovery period varied from 12 to 65 days with an average of 33 days. Only a few women were studied, but the findings suggest that their hæmoglobin regeneration is slightly slower than men's. Studies to show if subsequent donations are associated with quicker or slower regeneration are inconclusive; a much larger series would be necessary to establish this point. The most striking feature of the Iowa study is the effect of giving daily 1 g. of ferri et ammon. cit. during the recovery period. This experiment was made on 89 subjects whose regeneration after a previous donation had already been studied. The average recovery time was reduced by 27%, and the daily hæmoglobin gain increased by 49%. With subsequent donations iron appeared to have progressively less effect on regeneration. No way of predicting the speed of hæmoglobin regeneration beforehand was found. Snapper and others[3] found that Chinese donors were prone, presumably on account of their poor diet, to develop a microcytic anæmia, occasionally associated with achlorhydria, glossitis and splenomegaly; they responded rapidly to the administration of iron. The reserves of iron carried in the bone-marrow, though adequate for most natural emergencies, are reduced in hæmorrhagic anæmia, and there is satisfactory evidence, according to Schultze,[4] that reaccumulation takes place after iron

1. Fowler, W. M. and Barer, A. P. *J. Amer. med. Ass.* 1942, **118**, 421.
2. Unonius, E. and Schroder, I. *Nord. Med.* 1941, **10**, 1046.
3. Snapper, I., Lui, S. H., Chung, H. L. and Yu, T. F. *Chin. med. J.* 1939, **56**, 403.
4. Schultze, M. O. *Physiol. Rev.* 1940, **20**, 37.

administration. Recent work supports this view, for Whipple and his associates,[5] using radioactive iron, have shown that absorption from the intestine is controlled by the needs of the body; moreover, it has more than once been suggested that iron administration has a stimulating effect on erythropoiesis. It seems rational, therefore, to recommend a short but intensive course of iron after a substantial donation of blood. The objections are, first, the inconvenience to the donor and the occasional disturbance of intestinal function which may result, and secondly, the adverse effect which the measure might have on the recruitment of donors. It is obvious that only those with a satisfactory hæmoglobin level should be bled, and the routine determination of hæmoglobin content before bleeding is too seldom carried out. Using a suitable instrument a reliable assistant can be both accurate and speedy, and he or she should form an integral part of all bleeding teams.

ASPECTS OF TWINNING[6]

Professor Newman, well known as a biologist and an expert on twins, has brought together a mass of lore about twins—from the realm of myth and legend and from highly scientific sources such as the Maxim Gorky Medico-Biological Institute and Japanese salmon nurseries. Ambroise Paré reports that "one Margaret, a woman sprung from a noble and ancient family near Cracovia, and wife of Count Nerboslaus, brought forth at one birth thirty-five live children, upon the 20th day of January in the year 1296." Even the Dionne quintuplets hardly rival this. Twins raise problems in biology, embryology, medicine, psychiatry, and psychology; and the causation of twinning is a mystery. Why should there be a twinning rate in Belgium nearly 200 times as great as in Cochin China? (And why, incidentally, should Great Britain be almost the only civilised land unable to publish official statistics of their frequency?) It seems that there is a hereditary factor in the production of binovular twins, but how is it possible for a father who has inherited the twinning tendency to influence the production of binovular twins by his wife, as some authors maintain? How important is heredity in the production of uniovular twins? Some people say not at all; yet the famous Jean Picard, himself a uniovular twin, married a uniovular twin, and there is good evidence for believing that three uniovular pairs were born in succession, though in each case only one of the pair survived. Twinning has often aroused speculation about telepathy. Professor Newman tells a remarkable story of twins whose answers in examinations were so similar, despite separation by the breadth of the room, that it was decided to examine them in separate rooms. On the day, Charles was given his questions but would make no start. After a time, the principal came in and asked where the examination questions for Joe had been left; Joe had been kept waiting for half an hour or more. When finally Joe was given the questions Charles was able to begin. They wrote simultaneously, finished together, and came back to the classroom together. The principal was quite excited. "Boys," he exclaimed, "your Latin papers are identical; the same words, the same syntax, the same grammar, and the same mistakes! But I am sure you didn't cheat. It must be because you are twins." Some of the most interesting work with twins has been done by the co-twin-control method, mostly in Russia, until about two years ago. For instance, five pairs of uniovular twins were taken and one member of each pair instructed in building with building blocks by one method, their brothers by another. In the one method of training, the children, between the ages of 3 and 5, were required to copy a structure shown in a picture in which the position of every block was given. By the other method, their brothers had to copy the same picture but there was no indication of which block went where—the children had to find that out for themselves. After two months' training, all were given a new and complex structure to copy, both by the accustomed and unaccustomed methods, and were also given a free creation test. Progress had been slower in the twins who had received the lesser degree of help in construction during training, but in the test they greatly excelled their twin brothers in skill and diversity of manipulation and in the complexity of the structures they created.

5. Hahn, P. F., Bale W. F., Lawrence E. O. and Whipple, G. H. *J. exp. Med.* 1939, **69**, 739.

6. Twins and Super-twins: A Study of Twins, Triplets, Quadruplets, and Quintuplets. Horatio Hackett Newman, Sc.D., professor of zoology, University of Chicago. London: Hutchinson. Pp. 164. 10*s*. 6*d*.

GASTRIC MOTILITY AND DYSPEPSIA

FUNCTIONAL disorders of the stomach make up a large proportion of the minor dyspepsias (and not a few of the major ones) whose exact mechanism is still far from clear. Variations in gastric secretion, either in quantity or composition, can rarely be correlated with symptoms, and even complete achlorhydria may be unassociated with any indigestion. Gastric emptying time may again vary within wide limits without precisely known or even any symptom of dyspepsia, and is subject to considerable alterations under changing conditions. Peristalsis and tone of the stomach can be studied with fair accuracy by radiography and we have learnt that it is essentially these factors which are responsible for gastric sensations. Normally these two processes work harmoniously together and it is when disharmony arises that symptoms appear, though we cannot always elucidate the precise causes and factors provoking such disharmony. It may often be an alteration in nervous control, reflexly produced and independent of local stomach conditions, which is at fault. Wegelius[1] of Helsinki, studying such functional problems in children, has adopted the method of kymography of the stomach, as first introduced by Stumpf in 1936. By this means the movements of the stomach are recorded graphically, and kymographic records are made lasting 60–90 seconds each for at least two consecutive periods, so that the complete movements of the stomach can as it were be watched objectively for a relatively long time. In this way, as compared with the short exposures used in normal radiography, a clearer insight into both tone and peristalsis should be possible, and the two may be studied almost independently. Not everyone agrees about the exact interpretation or value of kymography, but Wegelius's observations are certainly interesting. Following the work of Weltz he describes three main types of gastric activity and emptying. First, the peristaltic (normal) type, in which emptying of the stomach depends on a satisfactory filling of the prepyloric canal, which in its turn depends on a well-balanced tone. Such emptying is independent of position and internal hydrostatic pressure. Secondly, a type in which tone is variable and filling of the prepyloric canal is poor; here the gastric contents are passed on unevenly and the emptying is to some extent dependent on posture and internal hydrostatic pressure. Thirdly, a definitely abnormal type in which emptying is completely asystematic. The stomach then empties itself like a lifeless tube, according to the hydrostatic pressure inside. Thus if it is filled rapidly in the upright position it empties equally rapidly ("Stürzenleerung"); small amounts of food may on the contrary be retained over long periods and may only be passed on when this residue is made to enter the prepyloric canal by the patient lying down, or by massage directed towards the pylorus. Between these three types are many gradations. This closer analysis of gastric motility suggests again the importance of such simple matters as posture and the rapid eating of food

1. Wegelius, C. *Nord. Med.* 1942, **14**, 1020.

in the causation of dyspepsia. It is permissible to infer that the bolting of meals, or the cramped position of the motor driver for instance, must be factors at work in many of the non-organic indigestions, and that the occurrence or not of such indigestion will depend at least in part on the conditions of tone existing at the time; this in turn depends mainly on conditions of general health and in particular on physical fatigue and mental state. It is but a short step from such functional variations to the secondary changes of gastritis. Hence may arise the many "nervous" dyspepsias in which gastritis is also present—but in which no clear physical cause of the gastritis can be found—and in which it is primarily general and nervous factors, mode of life and regime, that require investigation and attention rather than the purely local condition of the gastric mucosa.

WAY IN FOR THE POLIOMYELITIS VIRUS

THOUGH Landsteiner and Popper [1] showed as long ago as 1908 that the agent causing acute anterior poliomyelitis was present in the brain and cord of fatal cases and infective for monkeys, the common portal of entry of the virus in man has not yet been agreed on. That the virus was present in the fæces of human cases was shown by Kling [2] in Sweden in 1912 and confirmed by Sawyer [3] in the United States in 1915. For some reason this significant fact was lost sight of and interest became centred on the nasal and nasopharyngeal areas. Flexner and Lewis [4] first propounded the theory in 1910 that the virus reached the CNS from the nasopharyngeal mucosa by passing along the filaments of the olfactory nerves to the olfactory lobes of the brain. After this the virus was isolated by numerous workers from the nasopharynx of human cases both acute and convalescent and from so-called healthy carriers. This seemed to be sufficient evidence for most of those interested in spite of the fact that as a rule the epidemics did not occur at the season when other diseases spread by droplet infection were prevalent. In 1938 Sabin and Olitsky [5] observed that, after nasal instillation of the "MV" strain in rhesus monkeys, the virus was demonstrable in the nasal mucosa and secretions for the first 72 hours, but not at the time of paralysis. Sabin [6] also failed to isolate it from the same region after inoculation by the tonsillopharyngeal route. Recently Sabin and Ward [7] have failed to find the virus in the collateral sympathetic ganglia, adrenals and salivary glands of fatal human cases. Now [8] they have found that after intrasciatic inoculation of the MV strain in 8 rhesus monkeys paralysis developed in 3–5 days and virus was present in the brain and cord but could at no time be demonstrated in the nasal secretions. Even in the terminal phase the virus had not spread sufficiently in the CNS to involve the olfactory bulbs and adjacent nasal mucosa and was not present in the collateral sympathetic ganglia, adrenals or salivary glands. Their last two reports indicate that poliomyelitis virus after multiplication in the central nervous system probably does not spread outward again to affect the peripheral collections of nerve-cells in various tissues. They [9] have also failed to find any virus in the nasal secretions, saliva and oral secretions expectorated in 20 paralytic cases. The tonsillopharyngeal route has lately been discussed at length by Aycock,[10] who concludes that removal of the tonsils definitely increases the chance of infection with the virus of poliomyelitis and so should be carried out at times of the year when the disease is not prevalent. As early as 1898 [11] it was suggested that the gastro-intestinal tract was probably the portal of entry of the agent causing the disease. In 1938 [12] the presence of the virus in the stools of cases of poliomyelitis was rediscovered and the virus has now been isolated from the fæces of many people suffering from the disease and their intimate contacts. Thus Langmuir [13] has found that of 33 intimate contacts of 5 paralytic cases, four-fifths of those who had symptoms of illness and nearly as many of those who had no symptoms harboured the virus in their stools. The virus has also been isolated from sewage on six different occasions [14] in different localities in the USA and once in Sweden.[15] Last of all the virus has been found in flies caught in several different localities [16] either on the premises of cases of the disease or at the mouths of sewers draining an area in which cases of poliomyelitis were present. All these observations, together with the frequent findings of the virus in the human pharynx and intestine at autopsy,[7] suggest that these are the usual portals of entry in man.

1. Landsteiner and Popper, *Wien. klin. Wschr.* 1908, **21**, 1830. 2. Kling, C., Petterson, A. and Wernstedt, W. *Commun. Inst. med. Stockh.* 1912, **3**, 5. 3. Sawyer, W. A. *Amer. J. trop. Dis.* 1915, **3**, 164. 4. Flexner, S. and Lewis, P. A. *J. Amer. med. Ass.* 1910, **54**, 535. 5. Sabin, A. B. and Olitsky, P. K. *J. exp. Med.* 1938, **68**, 39. 6. *J. Amer. med. Ass.* 1938, **111**, 605. 7. Sabin and Ward, R. *J. exp. Med.* 1941, **73**, 771. 8. *Ibid*, 1942, **75**, 107. 9. *Ibid*, 1941, **74**, 519. 10. Aycock, W. L. *Medicine*, 1942, **21**, 65. 11. Bülow-Hansen and Harbitz, F. *Norsk. Mag. Lægevidensk.* 1898, **59**, 1170. 12. Trask, J. D., Vignec, A. J. and Paul, J. R. *Proc. Soc. exp. Biol. N.Y.* 1938, **38**, 147. 13. Langmuir, A. D. *Amer. J. publ. Hlth*, 1942, **32**, 275. 14. Paul, J. R., Trask, and Gard, S. J. *J. exp. Med.* 1940, **71**, 765. Trask and Paul, *Ibid*, 1942, **75**, 1. 15. Kling, C. (reported by Levaditi) *Bull. Acad. Med., Paris*, 1940, **123**, 335. 16. Paul, Trask, Bishop, M., B., Melnick, J. L. and Casey, A. E. *Science*, 1941, **94**, 395. Sabin and Ward, *Ibid*, 1941, **94**, 590. Toomey, J. A., Takacs, W. S. Tischer, L. A. *Proc. Soc. exp. Biol. N.Y.* 1941, **48**, 637.

NOT FOR US

AFTER what we have been told about the shortage of phenol and its derivatives no-one over here is likely to begin trials of a remedy for "athlete's foot" (tinea interdigitalis), advocated in America, which consists of equal parts of phenol and camphor. The phenol is melted and the camphor rubbed into it until the whole mass is liquified. A similar preparation of phenol 1 camphor 3 appears in the BPC as phenol or carbolic camphor. The fifty-fifty mixture, according to Francis,[1] is non-irritant to the skin and non-corroding to clothing. It is painted on the affected part several times a day; it must not be applied to wet skin, because water liberates the phenol. The application is said to give immediate relief from itching and has been successful in curing tinea cruris. A good story has been made out of this treatment in the *Reader's Digest* for June. It appears that Francis was using the phenol-camphor mixture as an insecticide in 1907 when he observed that it was non-irritant to the skin and appeared to cure a patch of ringworm on his arm to which he applied it. This article has been followed by a popular demand for the mixture in America sufficient to produce an editorial warning in a later issue of the same journal [2] that until more inquiry has been made it should be used with caution and under medical supervision. The more so, as athlete's foot as a rule responds readily to benzoic acid 5%, salicylic acid 3% in the form of Whitfield's ointment. Miller [3] describes a case in Canada which illustrates the possible dangers of a phenol-camphor mixture, in this case in the proportion 4 to 1. A young man had large patches of ringworm on his shoulder, scapular region, arm and trunk covering a total area of 60 sq. in. He had heard of the phenol-camphor remedy and made himself a mixture of 1 oz. camphor and 4 oz. carbolic acid, which his housekeeper proceeded to apply to the ringworm. Before the application was finished he felt faint and dizzy, so the housekeeper diluted the mixture with water and applied it again. Almost at once he became dyspnœic and he died a quarter of an hour after the beginning of the application. At the autopsy phenol was found in the internal organs, and death appeared to be due to acute pulmonary œdema. In this case absorption was no doubt aided by the inflammatory lesion present as well as by the addition of water to the mixture.

1. Francis, E. *J. Amer. med. Ass.* 1941, **117**, 1973.
2. *Ibid*, 1942, **119**, 182.
3. Miller, F. G. *Canad. med. Ass. J.* 1942, **46**, 615.

HEALTH WORKER AND PRODUCTION

T. O. GARLAND. M.D. CAMB., D.P.H.

THINGS are altering, but there's still little conscious relation between the methods and relationships of production and the medical student's curriculum. I can only speak accurately of my own experiences. We used to fill in the line on the case-sheet that started with the word "Occupation," but many a time the patient's answer meant nothing to us, while the inquiry was never pushed as far as a visit to the factory or dock where the accident had occurred. While we learned that diseases like lead poisoning occurred in painters, we learned nothing about the measures that could be taken at the site of work to prevent this happening. While we had vague ideas that tuberculosis was associated with social conditions, we did not write a sociological background to the TB case, illustrating how the hours of work and length of journey were related to the fatigue that had lowered the resistance; nor did we write our reports on cases of anæmia, illustrating how the wages or family budget were related to the state of nutrition.

Historically, we were still worse off. I can never remember any mention in a lecture of the mass ill health resulting from the conditions of production in 1820–30. The fact that vast epidemics of cholera swept through the country as a result of the chaotic crowding in unplanned and insanitary towns was news to me four years after I had qualified and was studying for the DPH. Till then I believed that cholera had never occurred in England, but was confined to the tropical countries. We were never offered an explanation why the highly developed technique of the physicians and surgeons who taught us was so vastly removed from the primitive health conditions that we suddenly met on the district—knowledge and technique on the one hand, filth and malnutrition, overcrowding and chronic ill health on the other. The explanation is only to be found in a historical study of the production methods and relationships of our society, but this we were never offered.

Today, this black-out on health in the factories, workshops and offices, pits, quarries, and shipbuilding yards must be torn down. Everywhere the cry is production and our training and interests, whatever they may have lacked, impress us that the healthy worker produces more than the unhealthy, and this sets each of us thinking, "What is my rôle?"

Health workers must not only cut down casualties in the industrial army, we must maintain the health of its members at the highest possible level. The first step is to make available to workers, managers and Government alike the knowledge that we possess for maintaining and building up health. We must talk in language free from medieval sorcery and modern humbug. The widespread neglect of simple health measures in industry is not only a reflection on the organised working-class and the capitalist; it reflects an apathy and lack of social responsibility in health workers.

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Casualties in industry from sickness and accidents are high. According to the first annual report of the Birmingham Accident Hospital there are now 100,000 accidents a year in that city alone requiring hospital treatment; many of them only as outpatients, but they all entail loss of time. Many kinds of industrial illness are increasing too. Dermatitis, for example, can be largely prevented by cleanliness, washing facilities, dust control, and protective clothing. Why then is it so sharply increasing? Go around and inspect the cleanliness and the washing facilities in factories and you will soon learn one reason. Cowsheds have been cleaned up enormously in recent years; let us at least do for our factories what we've done for cowsheds.

Accidents or illness figures for the whole country are practically impossible to get hold of. The Approved Societies used to make returns to the Ministry of Health, on illnesses of three days and over among their members. In 1933, when these figures were last published, the total for the year amounted to 29 million weeks. It's almost certainly much higher now and 30–40% of industrial sickness absence is probably from illness of under three days' duration. I don't think we should be far out today in putting the yearly loss from sickness in industrial workers at about 40 million weeks. But these figures are far from accurate and straightaway we see one of the essential needs of proper health planning—the keeping of proper sickness and accident records. You cannot plan for health without recording ill health. Some of the large factories in the war industries are recording an absenteeism among the women of 15%. This is absence on account of all causes, many of which won't be illness, but it is equivalent to an absence of 7–8 working weeks in a year.

I think we fall down badly in not keeping the organised working-class sufficiently aware of what are the principal elementary conditions for healthy work. We don't constantly emphasise in simple language the scientific requirements of lighting, ventilation, dust control and washing facilities. We don't constantly emphasise the dangers of over-fatigue and how it must be counteracted by rest-pauses or prevented by better transport facilities. We don't emphasise the paramount importance of good meals during the working shift. If we can get the organised workers really conscious about these matters, the battle will be nearly won, for the legal requirements are already largely provided in the 1937 Factory Act. But what can a mere 300 odd inspectors do to see that the act is observed in 250,000 premises? A little more certainly than the single medical inspector for all our mines and quarries—our most dangerous industry and one employing over three-quarters of a million men. He can have little more time than allows him to dash from one serious accident to another. Safety and health regulations will never be observed properly until the workers themselves understand them and see that they are kept.

The Royal Society of Medicine recently had a discussion on dermatitis in industry where one speaker referred to workers as "unthinking asses." This is an attitude sometimes met with among health workers towards other workers. We find them strangely ignorant on elementary facts about physiology, hygiene, dietetics, parasitology and so forth. But the mass of the workers have left school at fourteen and who has helped them learn about these facts since? Has the health profession done much? Mighty little, I suggest. When a consultant accuses them of being unthinking he really means ignorant, and I would ask him what has he done to help them to know? That is one of our foremost tasks, to make our technical knowledge available, so that the mass of the workers become conscious of the relation between health and production. This is a task that is technically simple. We haven't got to teach them complicated anatomical relations, or the meaning of our abstruse technical terminology, but we have got to plug these simple requirements for healthy work with proper scientific data that people with an elementary education can easily understand. Very often workers find it difficult or impossible to get a simple honest statement about the exact dangers of the substances they are working with. It would be a huge mistake to suppose that workers are so unthinking that they don't want to be healthy, or that they don't want to be free from accidents.

* * *

The medical and nursing forces available at the actual site of production are today limited. Even if we got a fair proportion allotted for work as medical inspectors of factories and in big industries as whole-time medical officers and had established in every fair-sized works a whole-time qualified nurse, we should not begin to have enough to cover the whole industrial field. We must be prepared, therefore, to use to a much greater extent people with short training in hygiene and accident prevention as our assistants in this industrial health drive. The attitude of some doctors who try to curtail the activities of the industrial nurse rather than develop them is deplorable. So is the attitude of some consultants, such as eye surgeons, who try to restrict the use of opticians in factory work.[1] In normal times when we can train adequate forces we would all wish firmly to maintain the highest standards of qualification for technical work, but in war-time, with greatly depleted forces, health workers must accept reasonable dilution like any

1. See *Brit. med. J.* May 16, 1942, Suppl. p. 1955, and *Dioptric News*, June 5, p. 69.

other industry. An ophthalmic surgeon has no more right to be exempt than a skilled electrician, nor can he claim special consideration on account of risk to the community. We are all now suffering these risks from dilution among skilled electricians and engineers and from all grades of skilled workers upon whom we rely every time we enter a 'bus or a tube-train, or even our own house, although half the time we are unconscious of it.

The majority of health workers, however, are not centred in industrial units. So far as they work in groups, the greater number are based on hospitals. A hospital, if you like, is the nearest approach to a factory in the health industry. Of course, workers in hospitals can see their link with industry easily when accidents from the bench come in and they return the worker in minimum time back into production. But catering for the treatment of all sickness and injuries in society means greater efficiency for that society and a production drive, when translated to the hospital, becomes an efficiency drive. We must keep our health services and our hospitals up to the maximum pitch of efficiency as our further contribution to the industrial production drive.

Reports are now coming in on the success of production committees in factories. Should there not be some parallel in a hospital to these production committees in a factory? The organisation of a hospital is more complex than any other unit that I can think of, so that it seems more than ever necessary to consult the various, possibly contending, interests on organisational matters. One of the strongest recommendations in the Athlone Committee's interim report on nursing was that there should be nurses' committees in every hospital. I wonder in how many hospitals this has been acted upon; and if it's necessary to have a medium for the expression of nurses' interests, it can be no less important to have one for the domestics, porters and technicians.

If one section of a group understand how their interests fit in with other sections, there is more likely to be good teamwork when heavy demands are made upon the whole group. But it is important to get together for other reasons. Many nurses are full of ideas on how to organise ward work better, but cannot get heard in the right quarters. I'm certain many surgeons could learn a trick or two from the hospital plumber, carpenter or engineer; and why don't physicians consult the kitchen staff more? Then there are still patients who get good ideas. Look up the letter from a patient on the design of the bedpan and the capacity of the urine bottle.[2] Many of them have ideas about evening clinics and out-patient appointments too. We must tap all these ideas in our hospitals. That is what is being done in industry today by production committees and there are already many remarkable stories of their achievements.

Industry is striving in other directions. For instance, they are bringing women into men's jobs wherever possible. Are we making it easy for women to train themselves and take the place of men? Have we thrown open every teaching hospital to women students on a par with men? If we haven't then we are lagging behind the best workers in industry. In the USSR even in peace-time 70% of the doctors were women. Industry too is examining jobs to see if the highly skilled people are employed on highly skilled work. Have we rationalised our industry? How many nurses—and nurses are very scarce—are doing work which wastes their training and technical skill? I heard of a sister taken off a casualty department and put in the stores, virtually as a clerk; I know of a hospital where all the nappies in the infants department are washed by nurses. Do doctors use clerks enough? The other day a house-physician sent me a long report in duplicate and he hadn't even used a piece of carbon paper. Do we use the dictaphone enough? Is machinery for domestic work used to the maximum extent? Domestics are very scarce too and more than ever we must extend the use of machines.

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Finally, does the health industry practise what I hope it's going to preach to other industries? Does it maintain the health of its own workers? Most hospitals don't even begin to record sickness properly among their staff. Nurses usually have individual sickness records but few hospitals can tell you the average days lost annually among first-year probationers compared with third-year, or compared with staff nurses or sisters. Even individual records of domestic staff are rarely kept. We are right behind the Ministry of Supply factories in this. Do we correct refraction errors in our staffs? Do we X ray all nurses and ward maids? Do we do this, that and the other to maintain them at their best health level and make sure of one essential for efficiency? No health worker need feel that there is not important work for us to do immediately, if we wish to line up with the tremendous production effort in industry.

2. *Brit. med. J.* June 6, 1942, p. 710.

In England Now

A Running Commentary by Peripatetic Correspondents

SURELY it was Mrs. Grundy herself, with the ghostly eye of good Queen Victoria upon her, who drew up the rules of procedure for women's recruiting boards. Each recruit is examined first by a male and then by a female doctor. From the neck to the knee the Wren of the future shall, according to the regulations, remain an unprobed mystery for the male doctor. He is allowed gently to tap the patella tendon but the joy of stroking the soles of her feet is denied him. That only the lady doctor may do, decently shrouded behind the thickest of curtains. He may ask whether she has fits or flatulence, or whether when she eats marmalade the top of her head steams (this, according to Commander Campbell of the Brains Trust is a well-known manifestation of allergy), but never may he inquire as to the regularity of her periods. In spite of all these precautions last week a stout matron in black alpaca and feather boa insisted on chaperoning her daughter through the Board, having heard "what dreadful goings-on" happen there. Then suddenly Mrs. Grundy unbends and the mere male is asked to give the colour of the recruit's eyes and hair and to describe her complexion, a generous gesture which a niggardly government quickly smothers by allowing one word only for each. Only one bare word to describe those eyes as deep as the brown pools of Western Eire, one word for the glory of the cunning of peroxide! For the complexion, were there but room, I would call to my aid the description of a sweet pea given in my favourite seed merchant's catalogue: "A bewitching combination of flesh pink richly overlaid on a cream ground. Slight shading in hot weather is essential to retain its delightful colour."

Coming from men's boards I notice that the female pulse rarely rises above the hundred mark during examination as the man's invariably does, "and blood lies quiet for all you're near." The modern young lady takes life very calmly. But oh, oh the halitosis. It is told of Queen Anaïtis of old that she kept an asp in such a place as to discourage love-making. Surely halitosis is as effective and almost as deadly a protection. I might have suggested this to the stout party in black alpaca.

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The most obvious and prosaic reason for doing a round on horseback is that it saves petrol and wear-and-tear of precious tyres. Another, more personal, reason is that it exercises a middle-aged body and, in the words of the patient, shakes up the liver—though why that long-suffering gland should be the better for being shaken up I leave to the physiologists to answer. Horses will go along tracks and lanes where cars cannot; horses don't have to be steered—at least, not to any absorbing extent—and from the saddle one does literally see things from a new angle. Being perched up in the air one can even look over our high Devon hedges and take a view at once leisurely and appraising of Farmer Blatchford's bullocks and Farmer Burrington's "yowes." Passing various homesteads at a stately pace one can ruminate upon the numerous dramatic illnesses attended therein—that cottage, for example, where the eldest boy so unexpectedly and tragically died of meningitis after mumps; that other cottage which was the scene of a difficult breech-delivery; that farm where the farmer had pneumonia, in the presulphanilamide days, which caused such alarm and despondency in the household until he successfully weathered it; and the parsonage in which, a dozen years ago, the then incumbent was operated upon for acute intestinal obstruction. There are also the birds to be seen; the daws and rooks, the fat wood-

pigeons and hysterical nesting peewits, the occasional cock-pheasant or the pair of partridges whose brood should be hatching out any day now. This morning I saw a hedgehog, dead it is true, and an adder sunning himself on the road who whipped into the hedge at our approach. I think Nancy, the old mare, rather enjoys her war-work, although she goes through the motions (as they say in the Army) of shying at anything the least unexpected and is a trifle coy about being caught up to be saddled and bridled unless first bribed with a handful of precious oats. On the debit side there is, of course, the extra time taken on the journey, but as the Chinese philosopher so pertinently asked, what do you do with all the time you save? Sometimes a sudden squall of rain drenches an old coat and pair of breeches, but they are used to this and don't complain. Anything else? Oh yes, the mare has to be groomed a bit, which has caused me to break a vow made after the last war (when I had too much of it) that I would never groom another horse.

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Anyone who is being stampeded into advocating a state medical service might do well to consider whether the clammy, soulless hand of state control may bring not efficiency but, being judge in its own case, propagandist and statistician too, merely a mask of inefficiency. He who moves about the country now and talks to workmen will find ample confirmation. I think the truth is that an individual may be capable of a hundred per cent. efficiency, a dozen people working harmoniously together may get into the nineties, but when hundreds of thousands are dealt with, here, Germany or anywhere else, even in the best conditions it is not much over seventy per cent. I believe that the medical service in this country before the war was an efficient, gradually evolving concern, of which I at any rate was proud to be a humble member, but since the daws, and some of them our own daws, have been whetting their beaks with a view to picking its carcase, one naturally ponders on the question of comparative moribundency. What of the other professions? What of the law?

In Gilbert Frankau's autobiography he tells us how his mother won a case and was £9000 the poorer for it, and that of course is a commonplace. What is the medical parallel? Curing a whitlow by amputating the hand, that's about it. The last Lord Chief Justice said that nothing but the direst necessity would make him a litigant, just as though a Regius Professor of Physic might say that only a badly strangulated hernia would make him seek the President of the Royal College of Surgeons. Bishop Barnes has recently pointed out how a poor man frequently daren't even defend himself and everybody knows this is true. Then Statute language, which in theory at any rate every man is supposed to understand, is an overgrown jungle of jargon, compared to which even our psychologists' outpourings are lucid prose. There, you reformers, is a nice corpse for you, and when you've picked it give us some clean, cheap, intelligible justice, please.

Then the Church, with its priest and large building in every parish, with its two elevens plus twelfth men in the House of Lords, with its vast organisation, are we satisfied that we are getting a spiritual return commensurate with all this? What return are we getting in fact? Can they produce a thousand members who are better, physically, mentally or morally, compared with controls? Even imponderables after all these centuries must have some gauge.

Finally politics, the High Court of Parliament itself, a profession without even an entrance examination, with no standard of competence whatever, into which provided he spends money in a certain way a mental defective can gain entrance, in which the gifts of the huckster and the wiles of mammon may count more than worth, which—vide the last pharmacy deal—often regards the nation's health as coin, barterable, and any scrutiny of its past as recrimination, as etymologically indeed it is, which is striving to keep itself unchanged by passing a yearly monkey-gland act, which, if certain misguided people had their way, would control *us*. Bah!

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Even as seen from outside, the walls of the tiny house near the Docks seemed to bulge with pent-up pressure. My knock was answered by a little old lady scarcely five feet high. Immediately and from every room there came a flood-tide of men, enormous men, all fully six feet and broad in proportion. They were in various stages of undress, but all wore recognisable traces of uniform—RAF, Navy, Army, Police, Fire Service were all there, and three or four wore the Merchant Navy badge. I expressed surprise at their number and size and was told: "Well, you see, Mum 'ere"—pointing to the little old lady—"she 'ad 22, and 19 on us was boys." They went on to tell how they had even a doctor among them, but how that was little Alf and "he always were a caution." Little Alf apparently went to sea as a deck boy, jumped ship in the States on his first trip, got himself adopted by a wealthy family, was put through Texas University from which he graduated as a doctor of osteopathy. In spite of the distinction this united family deeply resented the desertion. I had to examine one of their number, a seaman in the Merchant Service. He had been torpedoed north of Iceland on a stormy February night, had set out in an open boat with 27 others and had seen 22 of them die of exposure before, at the end of eleven days, their chief officer had led them ashore at Reykjavik. When I sympathised he said: "Oh them things is all right if you don't let yer imagination run on 'em." He had made a good recovery but I suggested that a few weeks at home would do him good. He was horrified. "Lor bless yer, Doc, I ain't never bin at 'ome that long. 'Sides the duchess, she's expecting any day and them goings-on fair scares me. I'd sooner be back at sea any day." We shook hands and I wished him luck. "Oh," he said, as a parting shot, "I reckon I'll 'ave to swim for it a time or two yet. Yer see, the dad and two of me brothers they was all sunk three times last war—but then, yer see, we're a lucky family. We aint' none on us bin drownded." It's not surprising that Mum grinned a bit proudly.

* * *

Midwifery certainly takes one through the gamut of the emotions. It began when we were found to have hæmolytic streptococci in our throats, not just one of us but both. That was a gloomy day; pariahs we wandered. Sam went so far as to throw doubt on the whole ætiology of puerperal sepsis. "Who says it's caused by them, anyway?" he said. "It's only guesswork." Always on the side of authority, I said No, it was proved. Semmelweis, I said. But even when it was shown that the streptococci we had were not group A, and had in any case mysteriously left our fauces, it was not Semmelweis we worshipped but the ingenuity of Lancefield. And then the deliveries; what thrills, what shouting, what cries of triumph and despair. And what an extreme pleasure when someone wanted a boy and it was one and she was happy. We used to get very worried if they said they weren't going to have any more babies, single beds in future, and other statements smacking of race-suicide, proportionately pleased if they said that the next one would be a girl. We encouraged them with tales of the rapidity of multips, but when by chance some such rapidity cheated us of a case before the sisters could ring us up—this was their story, and they stuck to it—what furies of frustration this unconscionable haste evoked. And everything paled before the pleasure of bathing the babies—even the enthralling contest between oneself and the perineum. What softness, what wriggles, what excellent and self-contained capacity for surviving shocks. If they give me a pre-Lethean choice, I am going to be a mother. A well-controlled multip, that will be me.

* * *

As usual I came into the surgery a little late and I found there a face I had not seen since the war started. I had known George as a greaser in the Cape boats for many years, for he was close on sixty and he would often drop in for "a bottle" during his few days ashore. He told me how last week he had been torpedoed off the Portuguese coast, picked up by a British freighter only to be sunk again off Ireland. This time he was not so lucky and he spent eleven hours clinging to a raft. He added that he had to join another ship at Liverpool on the morrow. "So I thought that I'd just look in for a bottle of your brown tonic." Off he went full of faith in his strychnine and gentian. It seemed to me that it was the Victoria Cross and not the brown tonic that he required.

Parliament

ON THE FLOOR OF THE HOUSE

MEDICUS M.P.

THE survey of health conditions in Scotland by Mr. Thomas Johnston last week had interesting parallels with the previous week's survey for England and Wales by Mr. Ernest Brown. The infantile death-rate in Scotland rose from 78 in 1940 to 83 in 1941; Mr. Brown's figure for 1941 was 59. The Scottish Secretary has asked his scientific advisory committee to report on the causes of this rise and to suggest remedies. Both causes and remedies, however, emerged from the debate itself. Mr. Johnston was able to report an improvement in the health of school children and in their heights and weights. This included entrants to school. Coupled with this was a report on the increase in the provision of milk at school and of school meals. The "but" came in on the deplorable conditions of housing in Scotland. These conditions are indeed "so terrible," to quote the Minister's own words, that he was able to plead successfully that "even in the vital interests of the war itself" the building of houses which had already been begun must not be suspended. Since war began 27,960 houses have been completed, 7482 are in process of building, but the situation as regards the provision of material becomes steadily more difficult. At the time when large-scale evacuations were taking place in this country reports from Scotland threw a lurid light on the conditions under which the poorer families in Scottish cities were living. The high infant mortality-rate may be, in part at least, attributed to these conditions, as also may the considerable increase in tuberculosis among the age-group 15 to 25 in girls.

Of other diseases cerebrospinal fever is still five times the prewar figure, and there has been an increase in respiratory diseases, but an improvement this year.

From the point of view of what one may call state-directed preventive medicine the Minister urged all local authorities to provide a reserve of fuel for next winter and especially to accumulate a reserve of timber for burning. There are many thousands of tons of timber-mill waste and many hundred thousands of tons of blown-down timber available in Scotland. The Minister is clearly pushing on with the provision of medical services under government and local authority control and referred to "one beneficent result of the war" in that he had "in Government ownership" 9 first-class acute hospitals with 8000 beds and 66 convalescent hospitals with 3800 beds. These are war casualty hospitals but are being used, so long as they are not filled with Service cases, to reduce the waiting list of cases for the voluntary hospitals. Six thousand of these cases have been already dealt with, some of which had been waiting for years, and one of the best known hospitals in Glasgow has had its waiting list reduced from 931 to 87. Mr. Johnston is also trying out in the Clyde basin an experiment in providing specialist diagnosis and treatment for young panel patients between the ages of 15 and 25—a service for which there is no charge.

While Mr. Brown in England and Wales is administering the EMS hospitals conservatively, Mr. Johnston in Scotland is trying out experiments in hospital and clinics organisation of a very interesting character. This experience will contribute much of value to postwar medical reconstruction. A great deal of work is being done, the Minister revealed, at regional gatherings with Scottish MPs. Scotland indeed is getting down to the job in a workmanlike way and is showing an understanding of the importance of health and of the difficulties of the medical profession which is very encouraging.

Mr. George Buchanan spoke out strongly in defence of the way in which doctors carry out the maternity services against which some criticisms were made. He also spoke of the slums, where he said the conditions had got worse. There used to be slums available however. Now there is "not even a slum" and people are herded together in big five- and six-apartment houses with not even a key in the door to ensure privacy and where there is no security of tenure. Mr. Buchanan wanted the Minister to requisition property for housing as the War Office does, and said that some tenement property, even in Gorbals, is standing empty. Mr. Westwood, the under-secretary, said in reply that the Minister and he would do all they could to expedite house building and that he had himself been appointed chairman of an advisory committee on housing now being set up. He revealed too that the nursing situation in Scotland is very much the same as in England. Difficulties are being dealt with, however, and Scotland is carrying on.

FROM THE PRESS GALLERY

Salaries for Mental Nurses

IN the House of Lords on July 8 Lord LATHOM regretted that the Minister of Health had seen fit to exclude from the consideration of the Rushcliffe Committee nursing staffs engaged in mental hospitals and institutions. He pointed out that these staffs had not been excluded from the ambit of the Athlone Committee. In accordance with the accepted view that it is undesirable to continue to differentiate between mental and physical disability, he felt that nursing should be dealt with as a whole, and the Minister had originally intended the Rushcliffe Committee to deal with the entire profession; but when the committee was set up in October of last year the terms of reference, merely by mischance, Lord Lathom understood, did not include mental nurses. On Nov. 27 at the first meeting of the committee Lord Rushcliffe announced that the terms of reference were to be altered to include them. A member of the committee who was also a leading official of the Mental Hospital Workers Union, however, took exception to an extension of the terms of reference and the Minister weakened. On Feb. 16, Lord Lathom at the head of a deputation of representatives of the County Councils Association, the Association of Municipal Corporations, and the London County Council urged the Minister not to recede from his previous decision. But in April the Minister announced that he had after all decided to exclude the 30,000 mental nurses from the deliberations of the Rushcliffe Committee, because there was a joint conciliation committee in existence representing the Mental Hospitals Association and the Mental Hospital Workers Union. Some of the largest mental hospital authorities are still, said Lord Lathom, outside this association—notably the LCC, responsible for a sixth of the beds of the United Kingdom, the Middlesex and the Surrey county councils. One of the reasons for seeking a national basis of remuneration for nurses was to avoid the competition which took place between authorities for staff, and the unofficial joint conciliation committee had no power to force any local authority to carry out its recommendations.

Lord BALFOUR OF BURLEIGH stressed the advantages of a national committee to deal with the whole profession. He thought it unfair that anybody should be forced to belong to a particular union in order to get protection.—Lord MANVERS pointed out that though the Mental Hospital Workers Union might fear eclipse in a larger negotiating body its members could only gain in status if they are formally recognised as nurses rather than as attendants. He realised that mental nurses were paid by a different method from ordinary nurses but it was not equality of pay that was desired but relativity of pay, not that all nurses should have an equal rate of pay but that salaries should all rise and fall at the same time.—In his reply Lord SNELL said that the Minister's decision did not mean that the matter had been settled for ever, but an alteration of the decision must wait on agreement among the members of the Rushcliffe Committee. He admitted that the Minister had originally intended that the mental hospital nursing service would be dealt with by the committee and that the opposition was unexpected. The joint conciliation committee had however worked well for a long time and it was the kind of machinery which is generally approved by the Government.—Lord LATHOM was obliged for this conciliatory reply and encouraged by the assurance that the matter was not finally fixed; but he thought it odd that the scope of a committee should be determined not by the decision of the Minister but by the consent of the committee set up to carry out the work.

Scotland's Health

Mark Twain once pointed out that though soap and education are not as sudden as a massacre, they are more deadly in the long run, and his aphorism was aptly

quoted in the Scottish debate on July 8 when, as is customary, the estimates for health and education were dealt with together. Mr. T. JOHNSTON, secretary of state for Scotland, said that if we could emerge from this war with our liberties and our freedoms intact, our health front unbroken, and high standards of nutrition and citizenship in our schools, little else mattered. One fair measuring-rod of general health was the condition of the children at school and despite an increase in most respiratory diseases and in cerebrospinal fever, and the disturbingly high infantile mortality, school reports for 1941 so far received were encouraging. And they intended to see that the system of nutritious school dinners, with all its potentialities for a still greater improvement in the children's physique, was pushed to the uttermost. Glasgow reported that measurements of some 14,000 school-children taken in September, 1940, and April, 1941, showed an improvement on 1939 measurements, especially as regards school entrants, and the report for the year ended July, 1941, told of consistent improvement in the physical condition of children of 5–13. The 1941 figures showed an increase over the figures for 1935–39 of 0·47 in., 1·07 lb. for five-year-old boys and 0·77 in. and 2·96 lb. for thirteen-year-old boys; of 0·38 in. and 0·95 lb. for five-year-old girls, and 0·52 in. and over 1½ lb. for thirteen-year-old girls. The increase of about 1 lb. in weight for the five-year-old boys and girls was unexpectedly high and suggested an immediate response to the supply of milk to children under school-age. The allowance of meat to school feeding-centres was worth 2*d*. per child per day, as against 1*d*. in catering establishments for the general community. In Scotland 80,000 school-children were now supplied with a substantial meal each day, 20,000 school-children got soups during the winter, and milk was supplied to over 500,000 school-children. Industrial canteens and British restaurants were playing their part in feeding the Scottish people.

Mr. Johnston is however much concerned at the infantile mortality rate which has risen from 68 per 1000 births in 1939 to 78 in 1940 and 83 in 1941. He had asked the Department of Health's scientific advisory committee under the chairmanship of Sir John Orr to report as quickly as possible on the causes of this rise and to suggest remedies, and a sub-committee of twelve experts on child health had been coöpted. Meanwhile the figures so far for this year showed improvement.

Against the main block of *infectious diseases*, said Mr. Johnston, they were in the main holding their own, particularly over the last pre-war year, 1938. Scarlet fever was down by half; diphtheria was up, although it was down from 1940; enteric fever was up; whooping-cough was also up; and the figure for *measles* was down. Of late the average annual notifications of diphtheria were about 10,000. In 1940 they rose to 15,711. In 1941 they had fallen to 13,586, so far in 1942 they were back again to just about 10,000. There were now 73% of school-children immunised in Scotland, and 58% of pre-school children. They had traced the conditions as regards immunisation of 428 out of 466 fatal cases of diphtheria among children last year. Among the immunised children there was only one death out of about 1000 cases who contracted the disease. Among the non-immunised children there were 427 deaths out of about 7000 cases. Mr. Johnston briefly described the Glasgow smallpox epidemic and said that the population had responded smartly to the medical officer's appeal to be vaccinated.

Several MOHs averred that since the war there had been a considerable increase in *venereal disease* in Scotland and the Department of Health were considering whether any further measures of control were possible. By all accounts there was a vast and disturbing increase in *scabies*, and the 1941 order giving power to inspect premises and examine and treat persons in a verminous state was now being operated in many parts of Scotland. Cerebrospinal fever was still five times the pre-war figure, but in the first half of 1942 it had declined. *Tuberculosis* still showed an upward tendency, the notifications for 1941 being 8302, or over 800 cases more than in 1938. Mr. Johnston thinks that the health of Scotland will suffer greatly if there is an acute domestic fuel shortage next winter. Heat supplies were as necessary as food supplies for disease resistance, and he urged local authorities and private citizens to lay in reserves of cut timber.

In pre-war years Scotland was short of some 3600 hospital beds. Now as a result of the war the Government owned in Scotland 9 first-class acute hospitals with 8000 beds and 66 convalescent hospitals with 3800 beds, which, so long as they were not needed for war casualties, could be used to reduce the waiting-lists of the voluntary hospitals. Already 6000 patients had been dealt with.

In the Clyde basin an important experiment in preventive medicine was being tried out. Any young panel patient of 15–25 might be referred to the regional medical service by his panel doctor for specialist diagnostic assistance, and where necessary treatment and convalescence in the State hospitals free of charge. The scheme began in January this year and by July some 610 cases difficult to diagnose, and caught perhaps just in time, had been dealt with. The hospital doctors recommended the Ministry of Labour to transfer some patients to more suitable employment so as to facilitate a cure. He hoped to see this system greatly extended both in age-groups and areas.

Housing conditions in Scotland were so terrible that not even in the interests of the war effort could they afford to stop building houses that had been already begun and accordingly since the outbreak of war néarly 28,000 houses had been completed.

Mr. Johnston found the increase in juvenile delinquency alarming. There was an increase of 3500 cases (22%) over 1938. It was disturbing that 6752 of the prosecutions were for theft, and 2883 for housebreaking. More than half the children were under 14. No doubt we must increase our approved schools but he regarded these institutions as a confession of the failure of society to provide playing fields. We should use our schools less for training memory and more for training citizens.

DEBATE ON MINISTER'S STATEMENT

Many members in the debate spoke movingly of the suffering caused by Scotland's housing problem. Lieut.-Colonel WALTER ELLIOT said we must face the fact that the curve of tuberculosis notifications is moving against us. It was a disease regarded with great fear but he thought it not unreasonable to ask the younger generation of women to accept tuberculosis nursing as a form of war service. Mr. M. K. MACMILLAN paid a tribute to the Minister's effort to establish an irreducible minimum of children's rights and said his nutritional policy was inevitably linked with reforms in education.

Mr. WESTWOOD, the under-secretary, who wound up the debate, gave details of areas where local authorities, or doctors, had refused to work under the schemes for maternity benefit. There was no scheme in operation, for instance, in Argyll, but a meeting had been arranged with the doctors. All the doctors in Dumbartonshire, except those in Helensburgh, had agreed to work the scheme. In Orkney county the scheme was not yet operating, but meetings were being held between officers of the Department of Health and the doctors. In Selkirk county the doctors had refused, but the matter was being taken up with the BMA. Meetings with the doctors had been arranged though the scheme was not yet operating in the following areas: Ayr burghs, Dundee burgh and Kirkcaldy burgh. In Clydebank burgh a scheme was in operation although only two doctors had agreed to give their services. In the main the doctors had tried to come into the scheme. Dumfries county had a scheme which was not yet submitted. In Dumfries burgh the scheme was not in operation, and from the City of Edinburgh they had had a scheme submitted in draft. Glasgow had been allowed to postpone bringing the scheme into operation until December. It was owing to the action of some doctors that schemes are not everywhere in operation. Mr. MAXTON interjected that doctors in Scotland were not an ill-set body of men, and if they objected to doing a job they had some good reason for it. Surely the Minister would try to meet the difficulty. Mr. WESTWOOD rejoined that the arrangement had been made with the BMA but that some of the local branches refused to accept the terms arranged by the parent body. Continuing, Mr. Westwood said that nearly 5000 members of the Civil Nursing Reserve were employed in hospitals. Some 200 nurses were needed for the tuberculosis service.

QUESTION TIME

Sanatorium Waiting Lists

Lord SNELL informed Lord DAVIES on July 8 that on March 31 there were 1507 people in England and 400 in Wales who had been on local authority waiting-lists for institutional treatment for tuberculosis for more than ten days. In Scotland 652 people had been awaiting admission for more than four days.

Shortage of Midwives

Mr. D. L. LIPSON asked the Minister of Health if, in view of the great shortage, especially in reception areas, of nurses trained to deal with maternity cases, he would enrol a mobile squad of nurses who would be willing to go, when required, to areas where they were most needed.—Mr. E. BROWN replied: The need for relating provision for maternity cases to movements of population has been recognised and the supply of midwives in reception areas has been increased by transfer and by recall to practice. My information is that the deficiency is rather in the total number of midwives available than in maldistribution, and I do not think, therefore, that a mobile squad would assist.

Infected Milk

Mr. DAVID ADAMS asked the Minister whether he was aware that persons suffering loss and damage through illness traceable to infected milk unfit for human consumption had a right of action against vendors of such milk; and whether, as the financial circumstances of poorer citizens prevented their taking such action, the local authorities in such cases make ex gratia payments.—Mr. BROWN replied: I am aware that in certain circumstances there may be a right of action, but I am not aware that local authorities make such payments. Mr. ADAMS: Does the Minister not consider that the local authorities ought to have power to recoup sufferers in their areas? Mr. BROWN: It is not quite as simple as that. In the absence of negligence by the vendor there is not a right of action in every case. (See judgment of the Court of Appeal in Square *v.* Model Farm Dairies (Bournemouth) Ltd., *Times Law Report*, **55**, p. 384.) Dr. E. SUMMERSKILL: Does the Minister not agree that unless he presses for an amendment of the national milk scheme, which comes into operation in September, and arranges for the purification of all milk, the Government will be morally responsible for the dissemination of tuberculosis?—Mr. BROWN: Everything is being done that is practicable in view of war conditions.

Prices of Artificial Limbs

Sir W. WOMERSLEY informed Mr. F. J. BELLENGER that his department had contracts with manufacturers of artificial limbs and carried out costing investigations to control the prices of limbs supplied at public expense.—Mr. BELLENGER: Are not most of the artificial limbs used in Ministry of Pensions hospitals supplied by private manufacturers under contract, and is the Minister aware of the wide discrepancy in prices of limbs supplied to him and those supplied to members of the public?—Sir W. WOMERSLEY: I am responsible for supplying limbs to persons disabled by enemy action and as a business man turned politician I see that we get them at a right and fair price. Facilities are provided by the committee of Roehampton Hospital to deal with civilian cases on good terms.

Reproduction Rate

Mr. IVOR THOMAS asked the Minister of Health whether the recently disclosed increase in the net reproduction rate from 0·75 to 0·80 represented a real increase in fertility or was only the result of the fuller information obtained under the Population (Statistics) Act.—Mr. BROWN replied: The figure of 0·75 was an approximation only, adopted pending the provision of fertility data under the Population (Statistics) Act which have enabled the net reproduction rate to be more correctly assessed at 0·80.

Prosecution of a Medical Author

Mr. R. W. SORENSEN asked the Home Secretary whether his attention had been drawn to the recent prosecution of the medical author and the publishers of an alleged obscene book; whether he was aware that the jury returned a verdict of not guilty and the judge dismissed the case; why the proceedings were instituted; and whether he was satisfied that those who initiated the prosecution were fully competent to discriminate between obscenity and the serious consideration of biological and psychological questions.—Mr. O. PEAKE replied: The attention of the Home Office having been drawn to this book it was referred to the Director of Public Prosecutions, and after full consideration the prosecuting authorities decided that there was prima facie a case for seeking the decision of a court. The book was accordingly submitted to the chief magistrate at Bow Street, who granted process at Common Law against the author and publishers. The case was heard at the Central Criminal Court. If the suggestion is that acquittal by a court necessarily implies that proceedings ought not to have been taken I am unable to agree.—Mr. SORENSEN: Is it not desirable to distinguish between pornography and literature of this kind? Mr. PEAKE: There is no kind of censorship and in a case of this kind it is impossible to predict with absolute accuracy what the findings of a jury will be. I think that in this case both the Home Office and the Director of Public Prosecutions have shown a commendable vigilance.

Calling-up of Medical Assistants

Sir LEONARD LYLE asked the Minister of Labour whether, in view of the serious shortage of doctors now available for the civilian population, he would allow the maximum leniency with regard to the calling-up of their essential staffs, such as dispensing and surgical assistants and secretaries.—Mr. GEORGE TOMLINSON replied: Arrangements have already been made for safeguarding essential female staff employed by doctors. Qualified dispensers are not being withdrawn from their employment and applications for the deferment or retention of secretaries and other assistants are considered individually in the light of their qualifications and the possibility of effecting adequate substitution.

Work on the Fields for Mental Patients

Arrangements have been made for suitable mental patients to be accommodated in hostels and to be employed in agriculture under the directions of county war agricultural executive committees. Institutions have also been urged by the Board of Control to organise working parties to help farmers with seasonal work. There are few suitable patients available who are not covered by these arrangements or employed in the institutions' farms and gardens in the production of food for consumption in the institutions. (Mr. TOM WILLIAMS replying to Sir RALPH GLYN.)

"FIGHTING FOR WHAT?"

FOOD, shelter and a job are the three primary necessities of life, and this war will not really have been won until a fair share of these are assured to all peoples in all lands. That, in brief, is what we are fighting for, and Sir John Orr points out in a 90-page brochure (Macmillan, 2*s.* 6*d.*) that unless the united nations can establish an economic system which will ensure that the food necessary for the world community is produced, exchanged and distributed in accordance with need and not profit there will be no firm foundation for an enduring peace. Similarly if proper housing, furniture, heating, sanitation and all the amenities of civilised living are made available to all those needing them, and not just to the few who can afford them, more than enough jobs will be created after the war for all those now engaged in the armed forces and the war industries. Otherwise these will be demobilised into another peacetime army of unemployed.

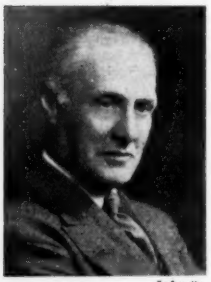
In previous books Orr has directed public attention to the importance of proper nutrition and the prevalence of widespread malnutrition. He is not, like some scientists, content to state the facts of his researches and leave it at that. He believes that this war has shaken up people's ideas and that we need not go back to the prewar world with its slums, unemployment and poverty. People are demanding a policy that will give them freedom from fear and freedom from want, and the book is his attempt to outline the basis of the new world which will secure this. Many will read this book with interest and find it the voice of their own aspirations. Some may have doubts about the ultimate result of some of his proposals: a National Service Corps, for example, would affect workers very differently under socialism and under capitalism. The author appears to envisage a marriage of the two regimes. He has great faith in the final triumph of what ought to be; but will it be possible to establish the new order simply by wanting a better life for all peoples? We must discover the economic and political causes of our past and present troubles and face them squarely.

Obituary

WILLIAM DUNCAN STURROCK

D.S.O., D.M. OXFD

Dr. W. D. Sturrock, who died in Oxford on June 29, was, with the late F. G. Proudfoot, an original medical officer of the maternity department of the Radcliffe, and its success as a local hospital service owes a great deal to his work in and for it. He was the chief obstetrical opinion and practitioner in Oxford and the surrounding district up to four years ago, when ill-health forced him to curtail his practice. His hospital work he performed devotedly until a few months before the end.



Lafayette

Sturrock was born in 1880, the son of John Sturrock, ICS, and educated at Charterhouse and Magdalen College, Oxford. He obtained a first class in the school of natural science (physiology) and qualified in 1905 from King's College Hospital, where he later served as house-physician. He then joined Dr. W. T. Brooks in practice in Oxford. For his service in France and in Macedonia during the last war he was awarded the DSO in 1918, and he was three times mentioned in dispatches. On his return to Oxford he succeeded Dr. Brooks as medical officer to Radley College, and later was also appointed medical officer to the Dragon School, Oxford. In both schools his work was a model of diligence and attention to detail, but indeed nothing he did was showy or shoddy.

Sturrock had great charm and kindliness, as his patients well knew. But he never pushed himself forward and he had an elusive quality which made him difficult to know intimately. He married in 1909 Mary, daughter of Ivor Macpherson of New Court, Topsham, and his only son, Jan Sturrock, is now serving in the Sappers.

CECIL JAMES MILLIGAN

B.A. CAMB., M.R.C.S., SURGEON LIEUTENANT R.N.V.R.

Cecil Milligan, the son of Dr. Wyndham Milligan of Brook Street, W.1, lost his life last November when HMS *Dunedin* was sunk. He was born in 1909 and educated at Sherborne, where he was in the late G. M. Carey's house. In 1927 he went to Caius College, Cambridge, and after graduating in 1930 he spent four years in business before beginning his medical studies at University College Hospital. It was his ambition to join his father in his practice and his friends thought his sincerity and sympathy fitted him for the work he had chosen. Having qualified in 1939 he was appointed RMO at Ashford Hospital and when he returned to London at the beginning of 1940 he became temporary physician to Margaret Street Chest Hospital. In June of that year he married Enid Margaret Paull, of Banchory, and soon afterwards was gazetted lieutenant surgeon in the RNVR.

Strachan, Aberdeen

WALTER ROSS JORDAN

M.D. LOND.

Dr. Jordan, who died on June 13, was a member of a brilliant family of physicians and surgeons which, for a period of eighty years, has been intimately connected with the hospital work of Birmingham. Although he himself was visiting physician to the Birmingham Municipal Infirmary (now Dudley Road Hospital), his high reputation rested on his work as physician to the Children's Hospital, a position which he held for 27 years, and as examiner (like his father before him) for lunacy cases before the Birmingham magistrates. He was a good clinician, had a love for children and also gained their affection; they were attracted by this tall, distinguished-looking and courtly gentleman, as were his colleagues. Jordan had a great sense of humour, was an excellent after-dinner speaker with a gentle sarcasm that always amused and never repelled his hearers. He was also a good committee-man, and the present high standard of the children's hospital owes much to his clinical and business ability. He was educated at King Edward's School and Mason College, qualifying MB Lond. from Queen's College in 1887. Throughout his life his old school was one of his greatest interests; he was appointed a governor in the year 1917 and remained one until his death and he was bailiff of the foundation in 1929 and again in 1940. He loved good literature and art and was twice president of the Birmingham Library. In politics he was a life-long Liberal, not always an easy faith to cling to in Birmingham. He died at the age of 78, a man to whom his younger colleagues looked up with a respect and admiration bordering on veneration.

JOHN WENLOCK ASHLEY

B.M. OXFD, SURGEON LIEUTENANT R.N.V.R.

THE Admiralty have posted Dr. John Ashley as "missing, presumed killed on active service," during June. He was born at Tenbury, Worcs., in 1914, the son of Mr. L. Ashley, a local solicitor. When he left Bromsgrove school in 1933 he went to Worcester College, Oxford, where he was awarded a Theodore Williams scholarship for human anatomy. He graduated BA with second-class honours in 1936 and won an open scholarship to the Middlesex Hospital. He qualified in 1939, taking his medical degree the same year, and volunteered at once for the RNVR, and after holding a house-appointment at Hove General Hospital he was called up three months after the outbreak of war and posted to HM Destroyer *Imogen*. In July 1940 he was seriously injured when his ship was sunk by a collision in a fog and after he recovered he held a shore appointment at Portsmouth till March of last year, when he was appointed to HMS *Hermione*.

Wright & Logan, Southsea

Infectious Disease in England and Wales

WEEK ENDED JULY 4

Notifications.—The following cases of infectious disease were notified during the week: smallpox, 0; scarlet fever, 1396; whooping-cough, 1457; diphtheria, 728; paratyphoid, 14; typhoid, 4; measles (excluding rubella), 7581; pneumonia (primary or influenzal), 734; puerperal pyrexia, 161; cerebrospinal fever, 105; poliomyelitis, 7; polio-encephalitis, 2; encephalitis lethargica, 6; dysentery, 242 (100 at Penrith); ophthalmia neonatorum, 83. No case of cholera, plague or typhus fever was notified during the week.

The number of civilian and service sick in the Infectious Hospitals of the London County Council on July 1 was 1624, including scarlet fever, 172; diphtheria, 147; measles, 440; whooping-cough, 298; enteritis, 57; chicken-pox, 77; erysipelas, 38; mumps, 60; poliomyelitis, 1; dysentery, 32; cerebrospinal fever, 11; puerperal sepsis, 18; enteric fevers, 4; german measles, 14; other diseases (non-infectious), 169; not yet diagnosed, 86.

Deaths.—In 126 great towns there were 1 (0) deaths from an enteric fever, 3 (0) from scarlet fever, 5 (1) from measles, 7 (0) from whooping-cough, 17 (2) from diphtheria, 30 (2) from diarrhœa and enteritis under two years, and 11 (0) from influenza. The figures in parentheses are those for London itself.

Ilford reported the fatal case of an enteric fever. The borough of Heston and Isleworth, Liverpool, Sunderland and Birmingham each reported 4 deaths from diarrhœa.

The number of stillbirths notified during the week was 227 (corresponding to a rate of 36 per thousand total births), including 20 in London.

Letters to the Editor

DOSAGE OF LOCAL ANÆSTHETICS

SIR,—In your last issue Dr. Organe put on record the grave consequences which may follow the use of large doses of local anæsthetics. He seems himself willing to countenance doses which, although much smaller than the ones used originally, appear to us still unnecessarily large. The makers of 'Percaine' state that "the maximal therapeutic dose in man is 2–3 mg. per kilo," and on this basis it may not be dangerous to give 150 c.cm. of 1 : 1000 percaine (i.e., 150 mg.) to a 10-stone man; but we do know that satisfactory operating conditions following intercostal, abdominal or brachial-plexus block can be obtained with a considerably less quantity of 1 : 2000 or 1 : 3000 percaine; while for the extensive nerve blocks preceding laryngectomy we use, as a routine, a total of 60 c.cm. of 1 : 2000 percaine for a patient weighing 10 stone—i.e., a dosage of ½ mg./kilo or 30 mg.

A commonly accepted standard for a full dose of procaine (synonyms 'Novocain,' 'Planocaine,' 'Sevicaine,' et al.), given intrathecally for upper abdominal anæsthesia in an adult, is 200 mg.; for percaine 15 c.cm. of 1 : 1500 dilution—i.e., a total of 10 mg. From this it will be seen that satisfactory anæsthesia is obtained from percaine in a twentieth of the dose needed for procaine. For local anæsthesia 100 c.cm. of 1% solution of procaine (i.e., 1 g. of procaine) is commonly taken as a standard full dose for an adult. A dose of percaine equivalent to this would be 50 mg., or a third the quantity of percaine which Dr. Organe would be ready to give to a 10-stone man.

We suggest that for local anæsthesia percaine should rarely be used in concentrations exceeding 1 : 2000 and that seldom is a dose in excess of 50 mg. necessary.

R. R. MACINTOSH,
Oxford. FREDA B. BANNISTER.

CONSIDERATE TONSILLECTOMY

SIR,—In your leading article of June 27 you advocate treating children requiring tonsillectomy as inpatients. The advantages are obvious; during all the years I was surgeon in charge of the department at the Bristol Royal Infirmary I made inpatient treatment my rule. But no less obvious is the increase in the expense, as compared with outpatient treatment; and a community impoverished by war may well have to consider whether the advantage is commensurate. When the weather is warm, ambulance transport provided, home conditions good, and nursing and if needed medical attendance available, the disadvantages of treating the majority of these cases in the outpatient department are not very great; and we may have to decide that beds must be reserved for patients whose need is greater. As to premedication, is it not rather a luxury than strictly necessary? The operation is so common that most children come up reassured by experienced comrades that there is nothing to fear—I have long ceased to marvel at their docility in the anæsthetic room. Very, very rarely does a child object to examination after the operation or show other signs of having been frightened; and while I can show several cases in which enuresis or night terrors ceased after operation I do not recall one in which they began then.

You mention "the older method," suspected of being rather crude. The older method is a formal dissection, with volsellum and scissors; some surgeons, I believe, even expect suspension and intratracheal anæsthesia making it definitely a major operation. For the occasional operator this is doubtless the method of choice. The modern method is that described by Whillis and Pybus (*Lancet*, 1910, ii, 875). A very blunt guillotine is used to evert and to hold the tonsil during the dissection; the resulting removal is complete and exact, with minimal bleeding and no interference with the fascia covering the muscles. It demands practice and a certain knack, apparently not readily acquired by those of riper years, and it is of British origin. These drawbacks are outweighed by its simplicity, the short time needed, and the relative absence of pain after operation; and it has established itself as the routine method for those who have to carry out several hundred such operations year after year.

I venture to make this point since we still meet those who, impressed by the often elaborate ritual of volsellum dissection, and perhaps prejudiced by the odium which in the opening years of the century attached to the guillotine (*cf.* Hey Groves, E. W. "The advantages of enucleation of the tonsils over removal by guillotine," *Bristol med.-chir. J.* 1905, **23**, 32), fail to appreciate the merits, surgical and economic, of the modern procedure.

Bristol 8. E. WATSON-WILLIAMS.

THE THIRD DIMENSION IN DIAGNOSIS

SIR,—Of two interesting articles which appeared in your columns this year, one (Cook and Sargant, Jan. 10, p. 31) demonstrated the unfortunate results of mistaking nervous disorders for organic disease; the other (Hulbert, May 23, p. 614) showed the unhappy effects of mistaking organic disease for nervous disorder. Both were written with proper scientific restraint and relied on the objectivity of case-records to substantiate their separate points of view. Each article solidly proved its case. This was perhaps the less difficult in that the truth of both theses was in any event self-evident.

I suggest that the real point lies a little deeper. In my own area in recent weeks I have come across two cases from EMS hospitals which are typical examples of one side of the question. The first was a case of blatant hysteria, with massive areas of analgesia, which was diagnosed, on the basis of a visible pulsation in the neck, as arteriovenous aneurysm of the left innominate artery, and operated upon—no aneurysm being found. The second was a case of enuresis with the history and symptomatology of a typical anxiety neurosis, which was treated by excision of the left seminal vesicle on the grounds that it was larger than the right! It may be added that these instances are by no means exceptional. The suggestion I have to make is that such astonishing gaffes are not adequately countered by the production of cases treated with equal folly by psychiatrists. The "tu quoque" is always a juvenile rejoinder, even when clothed in statistics. Moreover the circumstances are not parallel. When a psychiatrist misses the symptom-syndrome of a physical disease for, say, three months, he makes what is admitted by everyone, including himself, to be a serious error; and articles are scarcely needed to prove the liability of human beings to make serious errors. But when physicians or surgeons miss a classical case of anxiety neurosis, and investigate it for three months, to its lasting detriment, with every known variety of diagnostic apparatus, they are said to be "eliminating the possibilities of physical disease." It is precisely this attitude that demands an explanation; and admits, I suggest, of only one. They are applying a two-dimensional concept to a three-dimensional problem. Their efforts resemble those of intelligent two-dimensional creatures striving to comprehend a cube.

The psychiatric approach is not solely another department to which certain cases are to be relegated; it also supplies a new and vital factor in *every* case, not alternative to the picture presented by medicine and surgery but enriching that picture by addition of the human perspective. The truth is that psychiatry has two aspects. Out of the lack of a general recognition of this fact spring most of the futile disputes centring round its function. From one aspect it is indeed a definable specialty of medicine, though not of neurology, with which it has neither more nor less connexion than has neurology with the other specialties. From the other it is itself the offshoot of a new direction of the human mind, a direction discernible in many fields besides our own; and from this aspect it is applicable to every branch of our profession. From this latter aspect the psychiatric approach is neither more important nor less important than a new dimension of human measurement, meaningless without reference to the other dimensions, as they, without reference to it, are incomplete. Spatially expressed, where medicine is the height and surgery is the length, psychiatry is the depth of the human box of tricks.

This concept implies, as relativity did to Newtonian physics, a mental readjustment to matters long con-

sidered professionally settled. But the older ideas are thereby extended, not dispossessed. The apple still falls on the philosopher's head in spite of Einstein; and the knife will continue to fall on the gangrenous appendix in spite of the psychiatric approach. Nevertheless, like the picture of the universe, the picture of the sick person is not what it was. Something has been added, comparable only to a stereoscopic effect. I suggest that the complete acceptance—lacking even in some psychiatrists—of this fundamental reorientation will put an end, in those cases whose neurosis is manifest, to what may be called the laborious elimination of the inherently improbable. But it will do more. Its inclusion in our normal modes of reasoning will immeasurably enrich the possibilities of therapy, and open up a way for fresh advances of medicine in line with the new direction of thought.

Aldershot. ALAN MCGLASHAN.

PHLYCTENULAR OPHTHALMIA

SIR,—The annotation in your issue of July 4 referring to Mr. Sorsby's interesting work concludes by mentioning the evidence "that tuberculous infection can act as the sensitising agent of phlyctenular ophthalmia" and in the last sentence states: "If so, sufferers from phlyctens must be regarded as in a dangerous state of health and needing antituberculous treatment." Pædiatricians have long regarded phlyctens as similar to erythema nodosum—both hypersensitivity phenomena, and frequently tuberculin is the sensitising agent. In both instances the practical point is that the child with erythema nodosum or with phlyctens may come from an environment in which an unsuspected case of open pulmonary tuberculosis exists and in every instance a search for such contact should be made. I suspect—but my evidence is yet small—that both these hypersensitivity phenomena occur with intermittent, small dosage of infection. Children with phlyctens are seldom "in a dangerous state of health" but they may be in a dangerous environment and other members of the family or other children in the same school class (e.g., with a tuberculous teacher) may not be so lucky. Their dosage may result in tuberculous meningitis or miliary tuberculosis. In my view every child with a phlycten should be tested with 0·1 c.cm. of 1 to 10,000 old tuberculin. If strongly positive to this weak dilution then a tuberculous origin for their eye trouble is highly probable and the search for the source of infection should be energetically pursued.

An EMS Hospital. ALAN MONCRIEFF.

SMELL FROM PLASTERS

SIR,—Professors Seddon and Florey state that when the closed plaster technique is used a practically sterile wound is comparatively rare, thus implying that most open wounds treated in this way become septic. Happily most of the wounds reaching us here could be treated by radical excision within six hours of the time of injury. During the five months that I have been attached to this accident service I have not seen a pus-soaked plaster among fifty-odd cases admitted with open wounds treated by closed plaster; and I have known only one wound to become septic. The smell that does emanate from the plaster is that of dried blood and has not aroused comment except in two cases, neither of which needed interference.

The Radcliffe Infirmary Accident Service. G. MARIANI.

SOLDIER'S DOCTOR

SIR,—Your leader makes one wonder whether the writer has ever been a regimental MO or has merely read about it in books. Let him lay aside his rose-coloured spectacles for a moment and consider the facts. "The task of keeping a thousand men fit" would, I agree, be a fascinating one if the MO had the same thousand men under his professional care for any length of time, but the snag is that the men—and the MO—are always liable to be moved elsewhere at short notice; thus, there is no security of tenure, no permanency in the doctor-patient relationship. As for "the great variety of practice," it simply does not exist; the types of illness and injury seen (when not in action) are extremely limited in range and, if anything of real interest crops up, the patient is forthwith admitted to a hospital often a long way away so that the MO must lose sight of him. Moreover, on discharge from hospital, the patient is as like as not posted to another unit and so passes from the MO's ken for ever. It is true that, within narrow limits, there is scope for preventive medicine, but the MO who takes an undue interest in trivial illnesses will soon find his sick parades growing in numbers, which is rightly frowned upon by the combatant authorities. "Poise and confidence" in the soldier are best maintained by discouraging him from making a fuss. Of military hospitals I know nothing, but I would be grateful for a list of these mysterious ailments which can be "nipped in the bud." It is idle to deny that the job of regimental MO is conducive to apathy. Many MO's become so bored that they will not even attend refresher courses arranged for them unless compelled to do so. It is only the strongest spirits who can maintain their interest and energy in such circumstances. When the unit is in action, of course, it is quite another matter.

Crediton, Devon. L. N. JACKSON.

A THOUSAND YEARS OF ŒSTRIN THERAPY

SIR,—Endocrine treatment is generally considered an advance of the last forty years or so. While the first direct experimental evidence for the existence of internal secretions of any kind was furnished by Berthelot in 1849 by means of testicular transplants in animals, and endocrine extracts were advocated in the nineties by Brown-Séquard for rejuvenation, it was only in 1895 that the first successful transplantation for clinical purposes was carried out by Morris with ovarian tissue, and the potency of organ extracts was not scientifically demonstrated until 1912 when Alder induced œstrus in mice by means of aqueous ovarian extracts.

Œstrin therapy, however, was practised in the 10th century. Going through "Ortus Sanitatis," an old pharmacopœia by an unknown author, first published in 1494 by Jacobus von Meydenbach in Germany, I was struck by a quotation from "Haly": Fimus equorum si vaporietatis fœtuos mortuum mulieri fecundinam educit (The excrement of horses when evaporated brings about the delivery of dead fœtuses of a pregnant woman. *NB*—The bad Latin is original). The Persian, Haly ben Abbas, who died in A.D. 994, was court physician to the Buwide Emir Adhad ad-Daula and dedicated to that ruler under the title "Al-Maliki" (The Royal Book) a work which was the canonical treatise on medicine for a century until it was superseded by Avicenna's Canon. Translated into Latin in 1080 by Constantinus Africanus it went through a series of editions, the principal ones being the Venetian of 1492 and that of Lyon of 1529.

The empirical use by Haly ben Abbas of evaporated horse's urine for inducing stillbirth is interesting in the light of the recent discovery of Zondek that the urine of pregnant mares and stallions is one of the richest sources of œstrin available, and the work of Knaus showing that, if the oxytocic principle of the posterior pituitary is to act on the uterus, the latter must have been previously sensitised with large doses of œstrin.

St. Catherine's Society, Oxford. PETER P. H. SCHMIDT.

REACTIONS TO THE REPORT

SIR,—The planning of the future health services is in a state of complete confusion. The BMA Planning Commission in its interim report rejects state medicine in a state-salaried service. The Medical Practitioners Union is endeavouring to formulate a state medical service for approval by the Government. The National Health Association (headquarters at Tunbridge Wells) is planning a local government scheme administered by insurance committees. Doubtless many others are also planning schemes. Before going any further the Government should state, without any equivocation, what it wants us to plan. This is essential, since it either will or will not cover two professional imponderables—freedom of choice of doctor and patient, and compensation for capital invested in practices. The second must be cleared up before any steps can be taken. As I see the position either the Government has not said what it wants or the planning commission has kept the wishes of the Government from the profession. Probably a full state service was put up to the commission by the Government, or they would not have planned its rejection. The whole

profession should have been given the opportunity of voting on it before the commission rejected a full state service. It may be asked whether the MPU have complied with governmental wishes or instructions in endeavouring to formulate plans for a full state service; and whether the planning commission, with or without the backing of a majority of the profession, rejected the wishes of the Government. If so the commission must wait to find out the reactions of the Government before doing any further planning. Again I ask, what are we supposed to be planning?

Essex RURAL G.P.

MEDICAL DIRECTORY 1943

SIR,—To maintain the accuracy of our annual volume we rely upon the return of our schedule, which has been posted to each member of the medical profession. Should the schedule have been lost or mislaid we will gladly forward a duplicate upon request. The full names of the doctor should be sent for identification.

104, Gloucester Place, W.1. J. & A. CHURCHILL Ltd.

Notes and News

PLAN OR NO PLAN?

IF, as seems likely, research will be supported more and more by public money it is well for the public to understand how to ensure a good return for their money. In the past, of course, the support has been quite inadequate; thus J. D. Bernal[1] estimates that, in 1934, the gross amount spent by Government on medical research was £150,000; probably less, he adds, than a tenth of what would be reasonable and desirable in any civilised country. But a more lavish expenditure can be welcomed only if it goes hand in hand with wise administration, and the use of the products of research for the common good. Dr. Alan Gregg,[2] who is director for medical sciences at the Rockefeller Foundation, is more than doubtful about short-term policies in the planning of research. Far better to endow institutes and laboratories well, for it is notoriously difficult to recognise research ability at an early stage. A short-term grant might give the aspirant a period of probation in which to establish a claim to more permanent support; but much money is squandered in this way, and it might be wise to test a would-be researcher by other means—for example, as an apprentice or student assistant to some more seasoned worker in medical school or university. To devote funds solely to research which seems to be of practical use is futile, as both Gregg and J. R. Baker[3] point out. Baker, scenting danger in "planning" and state control, urges that the researcher must have complete liberty to pursue his work without political influence or interference. Few would wish to dispute his belief that "in science there is no loyalty to creed, party or class: only to demonstrable truth and reason." But his dread of an approaching state dictatorship over the subjects and methods of research seems unfounded; to begin with, any such tyranny could only be achieved at the cost of revolutionary changes in the present conduct and policy of the Medical Research Council; and so many important discoveries have been made by individual workers that they may well claim the right to pursue their ways undisturbed. But as an inevitable result of growing specialisation, there is growing room for team-work too, especially when the research is well planned and the members of the team have combined, not as a result of outside pressure, but by mutual consent.

A DOUBLE STETHOSCOPE

THE Bin-Aural Comparator, manufactured by the Capac Company (2 Ullswater Road, London, S.W.13), is a useful, if massive, form of stethoscope which makes it possible to compare simultaneously the sounds over any two areas of the lungs or heart. The two chest pieces, made of aluminium alloy, each consist of a special annular diaphragm contained in a small chamber to which either a conical or a concave end-piece can be attached. The head frame is a self-adjusting model which can be fixed in any desired position by means of a milled clamping nut. The instrument has the additional advantage that it can be converted into an ordinary type of stethoscope. It transmits respiratory and heart sounds satisfactorily without distortion; but there may be some who will find difficulty in analysing the sounds transmitted to the ear simultaneously from two different areas of the chest.

1. The Social Function of Science, London, 1939.
2. The Furtherance of Medical Research, New Haven: Yale University Press; London: Humphrey Milford, Oxford University Press. Pp. 129. 12s.
3. The Scientific Life. London: George Allen and Unwin. Pp. 154. 7s. 6d.

Royal College of Surgeons of England

At a meeting of the council held on July 9, Sir Alfred Webb-Johnson was re-elected president and Surgeon Rear-Admiral Gordon-Taylor and Mr. L. R. Braithwaite vice-presidents.

The following were elected for the ensuing year:

Hunterian professors.—Mr. W. H. Bowen, etiology of acute appendicitis; Mr. H. T. Roper-Hall, premaxillary cysts; Dr. L. H. Savin, surgery of non-magnetic intraocular foreign bodies; Mr. J. Cosbie Ross, injuries of the urinary bladder; Dr. Raymond Greene, frostbite and kindred conditions; Mr. S. M. Cohen, traumatic arterial spasm; Mr. J. E. A. O'Connell, vascular factor in the cerebrospinal-fluid circulation and its relationship to intracranial pathological processes; Mr. O. S. Tubbs, effect of ligation on infection of the patent ductus arteriosus; Mr. Alexander Weddell, cutaneous innervation; and Mr. W. Bremner Highet, injuries to peripheral nerves.

Arris and Gale Lecturer.—Prof. H. A. Harris, anatomy of posture in industry; clinical anatomy of the veins; and relation of the lymphatic system to the arterial and venous systems.

Erasmus Wilson Demonstrators.—Mr. L. E. C. Norbury, Mr. R. Davies-Colley, Mr. C. E. Shattock, and Mr. C. P. G. Wakeley.

Arnott Demonstrator.—Dr. A. J. E. Cave.

Sir Frank Colyer was re-appointed honorary curator of the odontological collection. The thirteenth Macloghlin scholarship was awarded to J. A. G. Holt, of Bristol Grammar School, and Miss H. B. Collard, BA, was re-appointed a Leverhulme scholar for a further year.

It was decided to recognise the posts of senior house-surgeon and first assistant house-surgeon at the Essex County Hospital, Colchester, for the six months' surgical practice required of candidates for the final fellowship examination and to renew the recognition of the post of house-surgeon at the Walsall General Hospital for the duration of the war.

A diploma of fellowship was granted to R. S. Lawrie, MB Lond., MRCP, and a diploma of membership to J. A. Judson (Leeds). The following diplomas were granted jointly with the Royal College of Physicians:

D.P.H.—Raghunath Bhaskar, P. R. T. Naidu, William Dodd.

D.P.M.—J. F. Cooper, Harry Fleming, Gerald Garmany, Margaret J. Garmany, J. H. Gould, Samuel Leviten, Patrick Morris, John Slorach, and P. C. C. Tresise.

D.L.O.—J. A. Harpman, C. M. Johnston, Ernest Kaplan, E. C. Richardson, and Ernst Rosenbaum.

University of Aberdeen

On July 9, the following degrees and diplomas were conferred:

M.D.—A. H. Cruickshank (*in absentia*) with highest honours, and D. A. Hunter, with commendation.

M.B., Ch.B.—A. L. C. Stalker (with first-class honours); John Mowatt (with second-class honours); Alexander Adam, Mary R. Alexander, R. M. Allan, Edwin Anderson, R. M. L. Anderson, H. I. C. Bowie, Inez M. Brebner, D. D. Brown, I. M. Brown, A. P. Buchan, I. J. Buchan, Mary S. Buchan, Neil Budge, James Cantlie, T. L. Carr, J. R. W. Catto, Isabel M. S. Chalmers, I. G. L. Craig, J. L. T. Dickie, Margaret S. Duguid, D. M. Dunbar, Lorna L. Duncan, Eileen M. Duthie, G. W. Forbes, Helen S. Fraser, Leslie W. Fraser, W. G. French, Robert Gibb, Isobel R. Grattidge, John Gray, A. M. Gwynn, Muriel O. Henderson, G. L. Herbert, Eilean A. Hunter, J. G. Hunter, T. O'N. F. Kelly, Margaret C. Kemp, W. Y. Laidlaw, Agnes K. Leslie, J. C. Lightbody, R. K. MacCuish, J. C. M. MacDonald, W. H. McGillivray, W. B. McGowan, Dorothy J. Mackay, J. M. McKay, A. A. Mackie, A. H. McLaren, Mary E. C. Maclean, Muriel M. McLean, Alexander Mair, V. D. R. Martin, Elza H. Meadows, D. G. Milne, J. G. Murray, Cecilia M. Park, G. M. Reid, Alma C. Ritchie, Mary B. Robb, A. F. Ross, G. I. M. Ross, K. A. D. Ross, I. L. Roy, L. S. Rusack, J. K. Russell, A. G. Scott, G. M. Sinclair, Emily S. Smith, E. B. Smith, J. A. E. Stewart, A. B. Strachan, Cecilia V. Urquhart, Andrew Walker, S. J. M. Walker, W. A. Walker, William Watt, Dorothy M. A. White, G. A. Wilson, and J. H. Wood.

D.P.H.—Mary Anderson, C. T. Baynes, Enid M. Clow, and Vera D. Davidson.

University of Bristol

At recent examinations the following were successful:

FINAL EXAMINATION FOR M.B., CH.B.

G. H. Valentine and G. H. Wattley (with second-class honours); Nancy R. Baldwin, R. F. Brooks, Rosalie M. Child, D. G. Davies, John Deighton, G. F. M. Hall, Joyce Kennard, A. G. H. Mitchinson, E. W. Moore, J. L. Pardoe, A. R. Rowe, Norman Slade, M. H. Thomas, Jean Wallace and G. A. Walton.

In Group II (completing the examination).—K. L. Brown and A. H. M. Oakes.

University of Liverpool

At recent examinations the following were successful:

M.D.—A. B. Higginson and C. K. Sconce.

FINAL EXAMINATION FOR M.B., CH.B.

Part III.—Anita M. Beck, S. Bradshaw, E. R. Carter, V. L. Cooper, H. V. Cross, Jean M. Frazer, G. W. Gibbs, Patricia F. M. B. Gould, T. C. Highton, M. Horwich, R. D. Hotston, H. P. Hughes, W. B. E. Jones, J. Littler, R. B. McConnell, Jane C. S. Maclachlan, L. Mandel, A. J. Marsden, R. H. Maudsley, P. D. Moss, J. C. V. Murphy, S. P. C. O'Reagain, G. J. Rees, Hilda M. Reeve, G. C. Roberts, C. D. Rosenwald, D. I. Rowlands, T. L. Schofield, Betty W. Steiner, R. V. Tracy Forster, Amabel M. Turner, D. C. Watson, H. H. Watts, W. D. Wilson. Rosalind Zalin.

Part I.—Ethel J. Higgitt, Margaret Slater and Elspeth M. Whittaker.

Medical Casualties

The following casualties have lately been announced:

Death on Active Service.—Acting Brigadier Francis Gerald Augustus Smyth, CBE, MB Lond., late RAMC.

Missing, presumed killed.—T/A/Surgeon Lieut.-Commander Harold Theodore Logan Broadway, MRCS, RNVR, HMS *Dunedin*; T/Surgeon Lieutenant William Anthony Cavanagh, LRCPI, RNVR, HMS *Repulse*; and Surgeon Commander Douglas Arnold Newbery, MRCS, RN, HMS *Repulse*.

Prisoners of War.—Major D. C. Bowie, FRCSE, RAMC; Major E. J. Curran, MB NUI, RAMC; WS/Captain R. L. Lancaster, MB Camb., RAMC; Major H. G. G. Robertson, MRCS, RAMC; Captain J. E. C. Robinson, MRCS, RAMC; and Major J. E. Sawyer, MRCS, RAMC.

Country Branch for the London Hospital

A self-contained hutted hospital which has been built in the grounds of an LCC children's hospital in Essex will be staffed and run by the London Hospital, some of the 360 beds being reserved for EMS cases. In three years over 51,000 beds have been built by the Ministry of Health under the Emergency Hospital Scheme.

Medical Society for the Study of Venereal Diseases

The annual general meeting of this society will be held at 11, Chandos Street, London, W.1, on Saturday, July 25, at 2 P.M. At 2.30 P.M. Mr. Aleck Bourne will read a paper on the diagnosis and treatment of non-gonococcal vaginal discharges.

Socialist Medical Association

At a meeting on Wednesday, July 22, at 7.30 P.M., at the Conway Hall, Red Lion Square, London, W.C.1, Mr. B. C. J. G. Knight, D.Sc., will speak on the sulphonamides: some history and theory.

Maternity and Child Welfare Group

About eighty doctors attended the third refresher course held by this group of the society of MOHs which took place at Gt. Ormond Street Hospital on July 4, when Dr. Donald Paterson spoke on premature babies and feeding difficulties, and Mr. Denis Browne on orthopædics with special reference to minor degrees of deformity.

In his paper on disorders in infancy, Dr. Wilfrid Sheldon laid stress on the conditions found by medical officers in their work at the welfare centre sessions, and Dr. W. G. Wyllie's lecture on the work of an asthma clinic was followed by a demonstration of skin tests, radiograms and breathing exercises.

Personnel for Tuberculosis Institutions

On June 22 a deputation on the shortage of nursing and domestic personnel in tuberculosis institutions was received at the Ministry of Health by Sir Wilson Jameson, chief medical officer, Mr. J. C. Wrigley, deputy secretary, Sir Weldon Dalrymple-Champneys, deputy CMO, and Miss K. Watt, chief nursing officer.

The deputation, which consisted of Dr. D. A. Powell, Dr. D. P. Sutherland, and Dr. J. B. McDougall (Joint Tuberculosis Council), Dr. G. T. Hebert and Dr. H. G. Trayer (Tuberculosis Association), Captain G. S. Elliston, M.P. (Society of MOHs), Sir Percival Horton-Smith Hartley, Dr. R. A. Young, Dr. F. R. G. Heaf and Dr. Harley Williams (NAPT), considered the shortage to be due to fear of infection and lack of glamour in nursing tuberculous patients in comparison with service casualties. It was urged that the Minister of Health should release himself from the pledge given to the Civil Nursing Reserve that its members should not be required to work in sanatoria unless they volunteered specially, and that a uniform scale of salaries should be set up.

Stretchers for Merchant Ships

The joint advisory committee on the health of the Mercantile Marine has recommended that at least two Neil Robertson stretchers shall be carried in all foreign-going merchant ships. A description of this stretcher appeared in our columns last year (*Lancet*, 1941, i, 289).

Queen's Institute of District Nursing

During 1941 Queen's nurses and village nurse-midwives attended 87,906 confinements with 136 (or 1·6 per 1000) maternal deaths. There are now 1543 Queen's nurses and 2752 nurse-midwives.

Royal Society of Tropical Medicine and Hygiene

The annual general meeting will be held at 26, Portland Place, London, W.1, on Thursday, July 23, at 4.30 P.M. Afterwards Sir Rickard Christophers, FRS, will read a paper on the treatment of malaria.

FIRST-AID posts and mobile units are being issued with hydrogen peroxide (20 vols.) for the treatment of Lewisite burns and with dredgers containing sulphanilamide powder for dusting on wounds when there is likely to be delay in getting a casualty to hospital. In future morphia will be kept at the posts in 1 oz. or ½ oz. bottles containing gr. ¼ morphine sulphate per c.cm.

Mr. W. S. GORDON, Ph.D., has been appointed director of the field station of the Agricultural Research Council at Compton, near Newbury, Berks., in succession to the late Mr. G. W. Dunkin. Dr. Gordon has been senior bacteriologist on the staff of the Animal Diseases Research Association at Moredun Institute, Gilmerton, Midlothian, since 1930.

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as an indication that they are necessarily available for export.

Appointments

TURNER, C. E. H., MRCS, DPH: deputy medical superintendent at the City Mental Hospital, Leicester.

SMITH, D. MORRISON, MB EDIN.: temp. clinical TO for West Norfolk.

PARMITER, B. R., MB LOND.: examining factory surgeon for Wimborne, Dorset.

Births, Marriages and Deaths

BIRTHS

BUTLER.—On July 4, at Farnham, Surrey, the wife of Dr. Kenneth A. Butler—a daughter.

CLYNE.—On July 2, at Edinburgh, the wife of Dr. Douglas G. Wilson Clyne—a daughter.

COOKSON.—On July 7, at Bournemouth, the wife of Dr. Harold Cookson—a son.

CRADDOCK.—On July 8, at Woking, the wife of Surgeon Lieutenant J. G. Craddock, RNVR—a son.

GOLD.—On July 6, at Stansted, Essex, the wife of Lieutenant Stephen Gold, RAMC—a daughter.

FALK.—On July 6, at Warminster, the wife of Captain John Falk, RAMC—a son.

GRAY.—On July 6, in London, the wife of Major Charles Gray, RAMC—a son.

TOLHURST.—On July 9, at Cheam, Surrey, the wife of Surgeon Lieutenant D. A. Tolhurst, RNVR—a son.

TURQUET.—On July 11, the wife of Captain Pierre Turquet, RAMC—a son.

MARRIAGES

ADAMSON—THORPE.—On July 7, at Rye, James W. W. Adamson, MD, to Marjorie E. W. Thorpe.

FARQUHAR—MARTIN.—On July 6, at Kidderminster, John Burns Farquhar, MB, captain RAMC, to Elizabeth Thomson Bell Martin, MB.

HOBBS—DANNATT.—On July 4, at West Norwood, Frank E. Hobbs, MRCS, to Peggy H. Dannatt, SRN.

DEATHS

BATTEN.—On July 9, George Beckett Batten, MD EDIN., FFR, DMRE, of Dulwich, aged 81.

CAMPBELL.—On July 12, at Bath, Basil Patrick Campbell, MD CAMB., FRCSE.

PATERSON.—On July 7, in London, Thomas George Ferguson Paterson, CB, DSO, MB DUBL., Major-General IMS, retd, late of Aldeburgh, Suffolk, aged 65.

POWER.—On June 27, at Ashby-de-la-Zouche, Edward Thomas Power, MRCS, of Atherstone, aged 87.

TRESIDDER.—On May 1, at Antibes, France, Percy Edgar Tresidder, MRCS., formerly of Nottingham, aged 68.

WORTHINGTON.—On July 8, at Llandrindod Wells, George Vigers Worthington, MB CAMB.

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BRITISH POSTGRADUATE MEDICAL SCHOOL
(UNIVERSITY OF LONDON)

SPECIAL PROBLEMS IN WAR SURGERY
27th to 31st July, 1942

Monday, 27th July	10 A.M.	Nutrition in the Wounded Soldier.	Dr. George Graham, M.D., F.R.C.P.
	11.15 A.M.	Ailments of the Soldier in Training.	Prof. G. Grey Turner, LL.D., D.Ch., M.D., F.R.C.S.
	2 P.M.	War Injuries of the Nose, Throat, and Ear (I).	Mr. P. Franklin, F.R.C.S.
	3 P.M.	War Injuries of the Nose, Throat, and Ear (II).	Mr. P. Franklin, F.R.C.S.
Tuesday, 28th July	10 A.M.	Injuries of the Face and their Treatment.	Mr. A. H. McIndoe, M.S., F.R.C.S.
	2 P.M.	Soft Tissue Injuries and their Repair.	Mr. R. Mowlem, F.R.C.S.
Wednesday, 29th July	10 A.M.	Skin Grafting	Mr. T. P. Kilner, F.R.C.S.
	11.30 A.M.	Boils and other Infections	Mr. R. H. Franklin, F.R.C.S.
	2 P.M.	Sprains, Strains, and Minor Fractures.	Major Duncan Croll, R.C.A.M.C.
Thursday, 30th July	10 A.M.	Diagnosis and Treatment of Acute Gonorrhœa.	Dr. Endean, M.R.C.S., L.R.C.P.
	11.30 A.M.	Diagnosis and Treatment of Primary and Secondary Syphilis.	Dr. Endean, M.R.C.S., L.R.C.P.
	2 P.M.	Rehabilitation	Colonel Large, D.S.O., M.C., R.A.M.C.
	3 P.M.	Co-operation of Surgeon with Dental Officer in the Maxillo-facial Injuries.	Mr. M. A. Rushton, M.B., L.D.S.
Friday, 31st July	10 A.M.	Injury to the Facial Nerve	Mr. T. E. Cawthorne, F.R.C.S.
	11.30 A.M.	War Injuries of the Eye (I)	Mr. Charles Goulden, O.B.E., M.D., F.R.C.S.
	2 P.M.	War Injuries of the Eye (II)	Mr. Charles Goulden, O.B.E., M.D., F.R.C.S.
	3 P.M.	Demonstration of Plaster Technique.	Squad. Ldr. Meekison, B.Sc., M.D. (Toronto), F.A.C.S., F.A.A.O.S.

The fee for the course will be one guinea, but no fee will be charged in the case of officers of the Armed Forces who are nominated for the course by their respective Director-Generals. Applications for admission should be addressed to the DEAN, British Postgraduate Medical School, Ducane-road, W.12.

Further War Courses will commence as follows:—

OPERATIVE SURGERY IN WAR TIME (limited to 20)	MONDAY, 24TH AUGUST.
WAR MEDICINE COURSE	MONDAY, 7TH SEPTEMBER.
WAR SURGERY OF THE EXTREMITIES	MONDAY, 21ST SEPTEMBER.

L. M. S. S. A.

FINAL EXAMINATION: SURGERY, August 10th, October 12th, November 9th, 1942; MEDICINE, August 17th, October 19th, November 16th, 1942; MIDWIFERY, August 18th, October 20th, November 17th, 1942.

For regulations apply REGISTRAR, Apothecaries' Hall, Black Friars-lane, London, E.C.4.

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APPLIED PHARMACOLOGY; HYGIENE; MEDICINE; OBSTETRICS AND GYNÆCOLOGY; PATHOLOGY; SURGERY; THERAPEUTICS.

Applications must be received not later than 1st September, 1942, by the ACTING PRINCIPAL, University of London, c/o Richmond College, Richmond, Surrey, from whom further particulars and forms of application may be obtained.

Royal College of Obstetricians and Gynæcologists.

The next EXAMINATION for the Diploma (D.R.C.O.G.) will be held on 6th October (written) and 20th October (clinical and viva voce).

Application for entrance to the Examination (on the prescribed form obtainable from the Honorary Secretary) must be made not later than TUESDAY, 8TH SEPTEMBER, 1942.

The Examination Fee is £10 10s., and successful candidates will be required to pay a fee of £5 5s. before being granted the Diploma of the College.

58, Queen Anne-street, London, W.1.

King's College, London.

The FACULTY OF MEDICAL SCIENCE (pre-clinical studies) will return to London in September.

The Faculties of Arts, Natural Science, Engineering, and Theology will remain in Bristol.

S. T. SHOVELTON, Secretary.

King's College, Strand, W.C.2.

Royal College of Physicians of Edinburgh.
Royal College of Surgeons of Edinburgh.
Royal Faculty of Physicians and Surgeons of Glasgow.

Copies of Regulations for the Triple Qualification (L.R.C.P.Ed., L.R.C.S.Ed., and L.R.F.P. & S.G.) and the Diploma in Public Health, containing dates of Professional Examinations for the year 1942–43 Curriculum, &c., may be had on application to THE REGISTRAR, Surgeons' Hall, 18, Nicolson-street, Edinburgh, 8, or to THE REGISTRAR, 242, St. Vincent-street, Glasgow, C.2.

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For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES suffering from Mental and Nervous Disorders, Alcoholism and Drug Addiction, either voluntarily, temporarily, or under certificate. Patients are classified in separate buildings according to their mental condition. Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT. *Telephone:* Ashton-in-Makerfield 7311. *Telegraphic Address:* Wootton, Ashton-in-Makerfield.

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Further particulars may be obtained by application to the Medical Director at the new address.

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Royal Eye Hospital,

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Applications are invited from registered medical practitioners, Male and Female, for the following appointments to become vacant immediately:—

SECOND HOUSE SURGEON (B2). Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may apply when appointment is limited to six months.

THIRD HOUSE SURGEON (A), including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for a period of six months.

Salary is at the rate of £150 per annum, with emoluments, for each appointment.

Applications, stating age, nationality, qualifications with dates, and accompanied by copies of recent testimonials, to be sent immediately to the SECRETARY.

The Royal Cancer Hospital (Free)

(Incorporated under Royal Charter), Fulham-road, London, S.W.3.

Applications are invited for the post of SURGICAL REGISTRAR. Candidates must be duly qualified and registered under the Medical Act and engaged in consulting practice only. Preference will be given to those holding the diploma of F.R.C.S. (Eng.). The appointment will be for the duration of the war. Honorarium £150 per annum.

Applications, together with copies only of not more than three recent testimonials, to be sent not later than the first post on Monday, 10th August, 1942, to—

CLEMENT COBBOLD, Secretary.

The Royal Masonic Hospital,
Ravenscourt Park, London, W.6.

Applications are invited from registered medical practitioners, Male, for the appointment of RESIDENT SURGICAL OFFICER (B1), to become vacant on 1st September next. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. The salary is at the rate of £250 per annum, together with full board and lodging and laundry.

Please apply in writing to the JOINT HONORARY SECRETARIES.

King Edward Memorial Hospital,
EALING.

Applications are invited from registered medical practitioners, Male and Female, for the appointment (for six months) of CASUALTY OFFICER AND DEPUTY RESIDENT MEDICAL OFFICER (B2), to become vacant on 1st August, 1942. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may apply. Salary at the rate of £225 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, nationality, and accompanied by copies of two recent testimonials, should be sent immediately to: R. A. MICKELWRIGHT, House Governor.

St. John's Hospital, Lewisham, S.E.13.

The General Committee invite applications for the post of TEMPORARY HONORARY ORTHOPÆDIC SURGEON. Candidates must be duly registered practitioners.

Applications, stating age, qualifications, experience, &c., accompanied by testimonials, to be received as soon as possible by: J. C. GILBERT, Secretary-Superintendent.

Hampstead General Hospital, N.W.3.

Applications are invited from single medical Men or Women for posts as below, tenable for six months. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may apply.

HOUSE SURGEON (B2), resident at Hampstead, N.W.3, vacant 1st September. Salary £133 6s. 8d. per annum.

CASUALTY MEDICAL OFFICER (B2), resident at Outpatient Department, Camden Town, N.W.1, vacant 1st September. Salary £100 per annum, plus an allowance at £50 per annum for duties in connexion with First-Aid Post established there.

Applications, on the prescribed form, with copies of three testimonials, to be returned not later than 24th July.

KENNETH A. F. MILES, House Governor.

Medical Research Council.
Radiotherapeutic Research Unit, Hammersmith Hospital, Ducane-road, W.12.

Applications are invited for the post of ASSISTANT RADIOTHERAPIST. Salary according to qualifications and experience; the appointment to begin at once.

Applications to be sent in writing to the DIRECTOR OF THE UNIT as soon as possible.

6th July, 1942.

The Prince of Wales's General
HOSPITAL, London, N.15.

Applications are invited for the appointments of:—

TEMPORARY HONORARY DENTAL SURGEON. Applicants must be Licentiates in Dental Surgery in one of the Royal Colleges of Surgeons.

TEMPORARY ASSISTANT PHYSICIAN to the SKIN DEPARTMENT. Applicants must be Graduates in Medicine of a recognised British University, Fellow or Member of one of the Royal Colleges of Physicians, and be engaged in consulting practice only.

Applications, together with copies of three recent testimonials, should reach the undersigned on or before Monday, 27th July, 1942. J. C. BURDETT, Director and House Governor.

2nd July, 1942.

The Prince of Wales's General
HOSPITAL, Tottenham, N.15.

Applications are invited from registered medical practitioners, Male and Female, for the following appointments to become vacant on 1st August, 1942:—

CASUALTY OFFICER (A), including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for a period of six months. Salary is at the rate of £120 per annum, with full residential emoluments.

SENIOR HOUSE PHYSICIAN (B2). Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may apply when appointment will be limited to six months. The salary is at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, nationality, qualifications with dates, and accompanied by copies of recent testimonials, to be sent to: J. C. BURDETT, Director and House Governor.

8th July, 1942.

Metropolitan Hospital, London, E.8.

Applications are invited from registered medical practitioners (Male) for the appointment of HOUSE SURGEON (A), now vacant, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for a period of six months. Salary at the rate of £200 per annum, with full residential emoluments.

Applications, accompanied by three recent testimonials, should be sent to the undersigned immediately.

FRANK JENNINGS, House Governor and Secretary.

Bolingbroke Hospital,
Wandsworth Common, S.W.11.

Applications are invited from registered medical practitioners (Male) for the appointment of RESIDENT SURGICAL OFFICER (B1), to become vacant on 31st July. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. Salary will be according to experience, with a minimum of £350 per annum, subject to appointment by the Medical Service.

Applications, stating age, nationality, qualifications, and experience, accompanied by copies of three recent testimonials, should be sent immediately to—

W. S. RANDOLPH BIBB, Secretary-Superintendent.

The Tavistock Clinic.
(THE INSTITUTE OF MEDICAL PSYCHOLOGY.)
(For the Treatment of Functional Nervous Disorders.)

Applications are invited for the post of DIAGNOSTIC PHYSICIAN. Candidates should be of consultant status. The Physician appointed will investigate the physical condition of patients but will not be expected to carry out treatment. The time required to be given to the work is about two hours a week. An honorarium of £50 per annum is offered.

Applications should be delivered before Saturday, 1st August, 1942, to the undersigned, from whom further particulars of the appointment may be obtained.

G. D. HERBERT, Administrative Secretary.

Kidderpore-avenue, N.W.3.

British Postgraduate Medical School.
(UNIVERSITY OF LONDON.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE PHYSICIAN (A) (Children), to become vacant on the 1st September, 1942, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41. The appointment will be for a period of six months. Salary is at the rate of £105 per annum, with full residential emoluments.

Applications should be addressed to the DEAN, British Postgraduate Medical School, Ducane-road, Shepherd's Bush, W.12, together with copies of three recent testimonials, not later than Tuesday, 28th July, 1942.

National Temperance Hospital,
Hampstead-road, London, N.W.1.

Applications are invited from registered medical practitioners (British), Male or Female, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, for the appointment of CASUALTY OFFICER (A), who will require to act as House Surgeon under the M.S. The appointment is for the period of six months, dating as from 1st September. Salary £120, per annum, with board, residence, and laundry allowance.

Applications, stating qualifications, age, &c., with copies of not more than three testimonials, by the 31st July, addressed to the SECRETARY.

St. Mark's Hospital for Cancer, Fistula
AND OTHER DISEASES OF THE RECTUM,
City-road, London, E.C.1.

Applications are invited from registered medical practitioners for the appointment of RESIDENT SURGICAL OFFICER (B1), to become vacant on 1st October next. Preference will be given to candidates holding diploma of F.R.C.S. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. Salary £550 per annum, subject to appointment by the Medical Service.

Applications, stating age, and accompanied by copies of three recent testimonials, must reach the undersigned on or before Wednesday, 12th August, 1942.

RAYMOND BULL, Secretary.

Evelina Hospital for Sick Children,
Southwark, S.E.

Applications are invited from registered medical practitioners not eligible for military service for the post of NON-RESIDENT OUT-PATIENT OFFICER, becoming vacant on the 1st August, 1942. The person appointed will be required to work for about five sessions a week, for which a suitable remuneration will be paid.

Applications, stating age, qualifications with dates, and accompanied by copies of three recent testimonials, should be sent without delay to: W. H. SIDNELL, House Governor.

Miller General Hospital,
Greenwich High-road, S.E.10.

Applications are invited from registered medical practitioners, Male, for the appointment of Two HOUSE SURGEONS (A), to become vacant on 17th August, 1942, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointments will be for a period of six months. Salary is at the rate of £120 per annum, plus share of Ministry of Health allowance, and full residential emoluments.

Form of application can be obtained from the undersigned, and must be returned not later than 29th July, 1942.

13th July, 1942. ERNEST E. MARKS, Secretary.

Battersea General Hospital,
London, S.W.11.

The Board of Management invite applications from duly qualified practitioners for the appointment of OPHTHALMIC SURGEON on the Honorary Medical Staff of the Hospital. The appointment in the first instance will be for the duration of the war only. The successful candidate will be required to take charge of a weekly Out-patient Clinic and to be responsible for the treatment and care of in-patients.

Applications, stating age, nationality, qualifications, and experience, should be sent to the SECRETARY of the Hospital not later than the 31st July, 1942.

Royal Free Hospital,
Gray's Inn-road, London, W.C.1.

Applications are invited from registered medical practitioners, Male or Female, for the appointment of RESIDENT MEDICAL OFFICER (B1) at THREE COUNTIES HOSPITAL, ARLESEY, BEDS. Applicants must not have been qualified for more than ten years. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. Duties to commence 1st September. The salary, which is paid by the M.S., is £350 per annum. The appointment will be for six months in the first place.

Applications, stating age, and accompanied by copies of three recent testimonials, should be sent to the undersigned (from whom all information may be obtained) on or before the 5th August.

RICHARD T. BARTLEY, Secretary.

Tilbury Hospital, Essex.

Applications are invited from registered British Male practitioners for the appointment of RESIDENT MEDICAL OFFICER (A), which will include the duties of Casualty Officer, to become vacant on 1st August, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointments will be for a period of six months. Salary at the rate of £120 per annum with full residential emoluments.

Applications, stating age, qualifications with dates, and accompanied by copies of three recent testimonials, to be sent, marked "Tilbury," to—

F. A. LYON, Secretary.
Seamen's Hospital Society, Greenwich, S.E.10.

Enfield Education Committee.

Applications are invited from Women for the appointment of ASSISTANT SCHOOL MEDICAL OFFICER. Salary scale £600 per annum, rising by annual increments of £25 to £725 per annum (with car allowance of £60 per annum), plus a war bonus which at the present moment is £24 per annum. The commencing salary would depend on qualifications and experience. Preference will be given to applicants holding a Diploma in Public Health. The officer appointed will be required to reside in the district. In addition to duties as Assistant School Medical Officer, the officer appointed may be required to carry out duties in connexion with maternity and child welfare and A.R.P. and such other duties as may be assigned by the Education Committee or the School Medical Officer. The appointment will be full time and subject to the provisions of the Local Government Superannuation Act, 1937, including medical examination by the Medical Officer of Health, and to such of the conditions of employment of the Education Committee as may apply. The officer appointed will be entitled to one month's annual holiday, subject to the exigencies of the service.

Forms of application, which can be obtained from me, should be returned with copies of three testimonials by the first post on 27th July, 1942. E. PASCAL, Director of Education.
Education Offices, Silver-street, Enfield, Middlesex.

Royal Hampshire County Hospital,
WINCHESTER. (462 Beds.)

Applications are invited from registered medical practitioners (Male and Female) for the appointment of RESIDENT RESUSCITATION OFFICER (B1), to become vacant immediately. Applicants should have held house appointments. Duties will include hospital transfusions, grouping and bleeding of blood donors, preparation of plasma. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. Salary is at the rate of £200 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, should be sent immediately to—

H. EWART MITCHELL, Superintendent and Secretary.
10th July, 1942.

Royal National Hospital for
CONSUMPTION, VENTNOR, ISLE OF WIGHT.

Applications are invited for the post of MEDICAL SUPERINTENDENT (B1). R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. Commencing salary at the rate of £1000 per annum, with house rent and rate free.

Applications, with copies of three recent testimonials, to be sent to Dr. GEOFFREY MARSHALL, O.B.E., 149, Harley-street, London, W.1, not later than 25th July, 1942.

Northamptonshire County Council.

Applications are invited from registered Women medical practitioners for the post of TEMPORARY WHOLE-TIME ASSISTANT MEDICAL OFFICER. Duties will be in connexion with the maternity and child welfare and school medical services and the officer will be required to undertake such other duties as the County Medical Officer of Health may direct. Special experience of practical midwifery and antenatal work in a maternity hospital will be considered an additional recommendation. Salary will be at the rate of £500 per annum, rising by annual increments of £25 to £700 per annum, together with travelling allowance according to the County Council's scale. The appointment will be subject to one month's notice on either side.

Applications, stating age, nationality, qualifications, and experience, with copies of three recent testimonials, should be sent not later than 1st August, 1942, to—

C. M. SMITH, County Medical Officer of Health.
County Health Department, Guildhall-road,
Northampton, 10th July, 1942.

Birmingham Accident Hospital
AND REHABILITATION CENTRE.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of RESIDENT SURGICAL OFFICER (B1), to become vacant on the 1st August, 1942. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. Salary is at the rate of £300 per annum.

Applications, stating age, nationality, qualifications with dates, and accompanied by copies of testimonials, to—

A. A. MACIVER, Secretary.
Bath-row, Birmingham, 15, 9th July, 1942.

Royal Lancaster Infirmary, Lancaster.
(285 Beds.)
(Hospital recognised by the Royal College of Surgeons (England) for Two Senior Posts.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of SECOND HOUSE SURGEON (B2), to become vacant on 9th August. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.) may apply, when appointment is limited to six months; otherwise it may be extended. Salary is at the rate of £175 per annum, with full residential emoluments.

Applications, stating age, nationality, qualifications with dates, and accompanied by copies of testimonials, to—

FRANK A. MILNES, Superintendent-Secretary.

Royal National Sanatorium,
BOURNEMOUTH.

Applications are invited from registered practitioners, Male and Female, for the appointment of RESIDENT ASSISTANT MEDICAL OFFICER (B2), to become vacant on 1st September next. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.) may apply, when appointment will be limited to six months. The salary is at the rate of £200 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of recent testimonials, should be sent within the next ten days to—

A. G. A. MAJOR, Secretary.

New Sussex Hospital for Women,
WINDLESHAM-ROAD, BRIGHTON. (104 Beds.)

Applications are invited from fully qualified medical Women for the post of RESIDENT MEDICAL OFFICER (B2), including W practitioners qualified more than three months, and liable under the National Service Acts, 1939–41, when appointment is limited to six months. Salary at the rate of £175 per annum. Duties to commence on the 1st September.

Applications, together with copies of recent testimonials, to be sent to the SECRETARY.

Birmingham Maternity Hospital.

Applications are invited from registered medical practitioners for the appointment of RESIDENT MEDICAL OFFICER AND REGISTRAR (B1) to commence duties immediately. Applicants must have had previous experience in Obstetrics and Gynæcology. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. Salary £200 per annum.

Applications and copies of testimonials to be sent immediately to HUGH C. ASTON, C3, Kenilworth-court, Hagley-road, Birmingham, 16.

City of Stoke-on-Trent Education COMMITTEE.

Applications are invited from fully qualified and registered medical practitioners for the post of TEMPORARY ASSISTANT SCHOOL MEDICAL OFFICER. Salary scale: £500 to £700 per annum by annual increments of £25, subject to satisfactory service. The successful candidate will be required to devote the whole of his (her) time to the duties of the office, and work under the immediate direction of the Senior School Medical Officer. The duties will consist of routine medical inspection and school clinic work. The appointment is subject to one month's notice on either side to terminate the engagement. Canvassing will be considered a disqualification.

Forms of application may be obtained from the undersigned on receipt of a stamped addressed foolscap envelope, and completed forms should be submitted not later than the 22nd July, 1942. Envelopes should be endorsed "Appointment of Temporary Assistant S.M.O."

J. F. CARR, Director of Education.
Education Offices, Town Hall, Hanley, Stoke-on-Trent.

Royal Hampshire County Hospital, WINCHESTER. (462 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE PHYSICIAN (A), to become vacant immediately, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for a period of six months. Salary is at the rate of £175 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, accompanied by copies of three recent testimonials, should be sent immediately to—

H. EWART MITCHELL, Superintendent and Secretary.
6th July, 1942.

The Royal Hospital, Wolverhampton. (Incorporated under Royal Charter.) (310 Beds.)

Applications are invited from registered medical practitioners, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, for the post of HOUSE SURGEON (A) (FRACTURE AND ORTHOPÆDIC DEPARTMENT). Duties to commence 1st August, 1942. Salary at the rate of £100 per annum, with full residential emoluments. The appointment is for six months.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent immediately to—

9th July, 1942. W. H. HARPER, House Governor.

Exeter City Hospital.

Applications are invited from Male registered medical practitioners for the appointment of HOUSE SURGEON (A), to become vacant on 1st August, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for a period of six months; otherwise for six months, renewable, but not to exceed twelve months. Salary is at the rate of £200 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, accompanied by copies of two recent testimonials, should be sent forthwith to—

G. B. PAGE, Medical Officer of Health.
5, Southernhay West, Exeter, 18th July, 1942.

Royal Manchester Children's Hospital, PENDLEBURY.

Applications are invited from registered medical practitioners, Male and Female, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, for the post of ASSISTANT MEDICAL OFFICER (A) at the OUT-PATIENTS' DEPARTMENT, Cartside-street, Manchester. The appointment will be for a period of six months, commencing 1st September, and the salary is at the rate of £150 per annum. The hours of duty at the Out-patients' Department are from 9 A.M. until 1 P.M., or until the work of the department is finished.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned not later than Friday, 31st July, 1942. By Order,

H. HEARDMAN, General Superintendent and Secretary.

Royal Isle of Wight County Hospital, RYDE.

Applications are invited from registered medical practitioners for the appointment of a HOUSE PHYSICIAN AND CASUALTY OFFICER (A) for 15th August. The appointment will be for six months. Salary at the rate of £170 a year, with board, residence, and laundry.

Also LOCUM TENENS wanted for first fortnight in August for above post.

Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may apply.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent forthwith to: A. S. GORDON, Secretary.

Royal Infirmary, Bradford.

Applications are invited from registered medical practitioners (Male) for the following appointments:—

Two HOUSE PHYSICIANS (one B2 and one A);
Two HOUSE SURGEONS (one B2 and one A);

including, in the case of the A posts, practitioners within three months of qualification and liable under the National Service Acts, 1939–41; for the B2 posts, practitioners qualified more than three months cannot be considered unless rejected by the R.A.M.C. These posts will become vacant on 31st August, and the appointments will be for six months. Salary £150 per annum, with board, residence, and laundry. There are 345 Beds and seven Resident Officers.

Applications, stating age, nationality, qualifications, and previous experience, with copies of three recent testimonials, should be sent immediately to—

H. TRUSSON, House Governor and Secretary.
8th July, 1942.

County Borough of Preston. SHAROE GREEN HOSPITAL. (250 Beds.)

Applications are invited from registered medical practitioners, Female, for the appointment of JUNIOR RESIDENT MEDICAL OFFICER (A), to become vacant on the 9th September, 1942, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for a period of six months; otherwise limited to twelve months. Salary is at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be forwarded to the MEDICAL SUPERINTENDENT, Sharoe Green Hospital, Fulwood, Preston.

County Council of Essex and Urban DISTRICT COUNCIL OF THURROCK. COMBINED MEDICAL SERVICE.

Applications are invited from duly qualified medical practitioners, holding a Diploma in Public Health, for the appointment of ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH AND DEPUTY MEDICAL OFFICER OF HEALTH. The appointment is a temporary one. The salary attaching to the post will be at the rate of £700 a year, rising, subject to satisfactory conduct and service, by annual increments of £25 to £800 a year, but the commencing salary may be varied having regard to the experience and capabilities of the candidate appointed.

Forms of application may be obtained from the Clerk of the County Council, to whom they should be returned completed, accompanied by copies of three recent testimonials, not later than Saturday, 1st August, 1942.

Canvassing, whether directly or indirectly, is forbidden.

JOHN E. LIGHTBURN,
Clerk of the County Council.
A. E. POOLE,
Clerk to the Urban District Council of Thurrock.
County Hall, Chelmsford, 8th July, 1942.

Cameron Hospital, West Hartlepool. (86 Beds.)

Applications are invited from registered medical practitioners (Male or Female) for the appointment of a HOUSE SURGEON (A), now vacant, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for a period of six months. Commencing salary £150, increasing to £200, per annum, with full residential emoluments.

Applications, stating age, qualifications, nationality, and experience, together with copies of three recent testimonials, should be sent as soon as possible to: C. S. KAY, Secretary.

County Borough of Southampton. APPOINTMENT OF ASSISTANT SCHOOL DENTIST.

Applications are invited from dental surgeons (Male or Female) for the above appointment. The successful candidate will be required to pass a medical examination, and to contribute to the Local Government and Other Officers' Superannuation Scheme. Salary £500 per annum.

Form of application may be obtained from the undersigned, to whom it should be returned, together with copies of three recent testimonials, not later than the 7th August, 1942.

H. C. MAURICE WILLIAMS, Medical Officer of Health.
Civic Centre, Southampton, 10th July, 1942.

Leigh Infirmary, Leigh, Lancs.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of RESIDENT SURGICAL OFFICER (B1), to become vacant on the 1st October, 1942. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. Salary is at the rate of £400 per annum, with full residential emoluments.

Applications, stating age, qualifications, and accompanied by copies of three recent testimonials, to be sent to—

B. R. CARTER, Secretary-Superintendent.

Llanelly and District General Hospital.

(148 Beds, plus 100 Beds (Annexe).)

Applications are invited from registered medical practitioners, Male or Female, for the appointment of JUNIOR HOUSE SURGEON AND ANÆSTHETIST (A). R practitioners within three months of qualification may apply when appointment will be for a period of six months. The salary is £175 per annum, with the usual residential emoluments.

Applications, stating age, qualifications, nationality, accompanied by three recent testimonials, to be sent immediately to—

T. E. PIPE, Secretary.

Llanelly and District General

HOSPITAL. (148 Beds plus 100 Beds, ANNEXE.)

Applications are invited from registered medical practitioners, Male or Female, for the appointment of SENIOR HOUSE-SURGEON AND ANÆSTHETIST (B2) including R practitioners who now hold A posts.

To R practitioners the appointment will be limited to six months. Salary according to experience and qualifications, with minimum of £200 per annum.

Applications, stating age, qualifications with dates, nationality, and present post, accompanied by copies of three recent testimonials, should be sent immediately to—

T. E. PIPE, Secretary.

Victoria Hospital, Accrington.

Applications are invited from registered medical practitioners for the following appointments:—

SENIOR HOUSE SURGEON (B2). Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may apply, when appointment is limited to six months. Salary £200 per annum, with full residential emoluments.

HOUSE PHYSICIAN (A). Practitioners within three months qualification and liable under the National Service Acts, 1939–41, may apply, when appointment will be for a period of six months. Duties will include anæsthetics and ophthalmic department. Salary £175 per annum, with full residential emoluments.

The appointments will become vacant 23rd July, 1942.

Applications should be sent as soon as possible to—

W. H. WARHURST, LL.B., Honorary Secretary.

Town Hall, Accrington.

Derbyshire Royal Infirmary, Derby.

(Voluntary Hospital—Total 646 Beds.)

Applications are invited from registered medical practitioners (Male and Female) for the appointment of a HOUSE SURGEON (A), to become vacant immediately, including R practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for a period of six months. Salary is at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to—

ARTHUR TAYLOR, Superintendent and Secretary.

West Sussex County Council.

ST. RICHARD'S (PUBLIC HEALTH) HOSPITAL, CHICHESTER. (678 Beds.)

Applications are invited from registered medical practitioners (Male and Female) for the appointment of Two HOUSE SURGEONS (A), vacant now, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for a period of six months; otherwise it may be extended, but not to exceed one year. Salary is at the rate of £120 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, nationality, with details of any experience since qualification, and accompanied by copies of any recent testimonials, should be sent to—

T. C. HAYWARD, Clerk of the County Council.

County Hall, Chichester, 4th July, 1942.

The Gloucestershire Royal Infirmary

AND EYE INSTITUTION, GLOUCESTER.

The General Committee invite applications for the post of TEMPORARY HONORARY EAR, NOSE, AND THROAT SURGEON. Candidates must be duly registered practitioners.

Applications, stating age, qualifications, experience, &c., accompanied by testimonials, to be received by the undersigned on or before Wednesday, the 22nd day of July next.

F. J. SYMONS, House Governor and Secretary.

20th June, 1942.

The Liverpool Eye, Ear and Throat

INFIRMARY, Myrtle-street, LIVERPOOL, 7.

Applications are invited from registered medical practitioners (Male or Female) for appointment of AURAL HOUSE SURGEON (B2). Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may apply when appointment is limited to six months. Salary at rate of £120 per annum, with full residential emoluments.

Applications, stating age, experience, qualifications with dates, nationality, and present post, and accompanied by copies of three testimonials, should be sent to—

GEORGE NICKSON, Secretary.

Bradford Children's Hospital.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE PHYSICIAN (A), to become vacant on 1st September, 1942, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41. The appointment will be for a period of six months. Salary is at the rate of £150 per annum, with board, residence, and laundry.

Applications, stating age and nationality, with recent testimonials, should be sent to—

J. W. LONGLEY, Secretary-Superintendent.

Essex County Council.

ESSEX COUNTY COUNCIL HOSPITAL, BLACK NOTLEY, NEAR BRAINTREE.

Applications are invited from registered medical practitioners, for the appointment of JUNIOR ASSISTANT MEDICAL OFFICER (B2) for the Sanatorium portion of the above Hospital. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.) may apply, when appointment will be limited to six months; otherwise not exceeding twelve months. The salary is at the rate of £250 per annum, with residential emoluments valued at £160 per annum.

Applications, on forms to be obtained from the undersigned, to be delivered at the County Hall, Chelmsford.

Canvassing whether directly or indirectly is forbidden.

JOHN E. LIGHTBURN, Clerk of the County Council.

County Hall, Chelmsford, 22nd June, 1942.

Huddersfield Royal Infirmary.

(321 Beds.)

Male HOUSE SURGEON (A) required to be attached to EYE, EAR, NOSE, AND THROAT DEPARTMENTS. Duties to commence immediately, and will include the administration of anæsthetics. Salary £150 per annum, with board, residence, and laundry.

R practitioners within three months of qualification may apply, when appointments will be for a period of six months; otherwise subject to renewal for a similar period.

Applications, with copies of three recent testimonials, to be addressed immediately to—

H. J. JOHNSON, General Superintendent and Secretary.

Liverpool and District Hospital

FOR DISEASES OF THE HEART, 34, Oxford-street, LIVERPOOL, 7.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE PHYSICIAN (A), to become vacant on 1st September, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for a period of six months. Salary is at the rate of £100 per annum, with full residential emoluments. Facilities for M.D. thesis.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to: Miss J. LEWIS, Secretary.

The University of Sheffield.

DEPARTMENT OF ANATOMY.

The Council of the University invites applications for two posts of DEMONSTRATOR IN ANATOMY (Male or Female) at a salary of £300 per annum, duties to commence on 1st October, 1942.

Applications, accompanied by testimonials, should reach the Registrar of the University (from whom full particulars of these posts may be obtained) not later than July 31st.

Kent County Ophthalmic and Aural

HOSPITAL, MAIDSTONE. (158 Beds.)

APPOINTMENT OF HOUSE SURGEON (B1).

Applications are invited from registered medical practitioners (Male or Female) for the above post, which becomes vacant on the 12th August. Applicants should have held house appointments and had experience in the treatment of eye, ear, nose, and throat diseases. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. The Hospital is fully recognised by the Examining Board for the D.O.M.S. and the D.L.O. Salary is at the rate of £350 per annum, with full residential emoluments.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, and accompanied by copies of three recent testimonials, should be sent not later than Monday, the 3rd August, to—

JOHN W. STRICKLAND, F.H.O.A., Secretary.

East Suffolk and Ipswich Hospital.

(400 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of Two HOUSE SURGEONS (A), to become vacant in August, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41. Both appointments will be for a period of six months. Salary at the rate of £144 per annum, with full residential emoluments.

Applications, stating age, nationality, qualifications with dates, and accompanied by copies of testimonials, to—

The Hospital, Ipswich. ARTHUR GRIFFITHS, Secretary.

Bristol Royal Hospital.

(Incorporating the BRISTOL ROYAL INFIRMARY and BRISTOL GENERAL HOSPITAL.)

Applications are invited from registered medical practitioners (Male and Female), including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, for the following A appointments, for the six months commencing 1st September, 1942 :—

Four HOUSE PHYSICIANS, one of whom will also act as Second House Surgeon to the FRACTURE DEPARTMENT and another of whom will be resident at the Weston-super-Mare Hospital.

Four HOUSE SURGEONS, one of whom will also act as Second Casualty House Surgeon and another of whom will also act as House Physician to the SKIN AND RADIOLOGICAL DEPARTMENTS. One will also be resident at the Weston-super-Mare Hospital.

One HOUSE SURGEON to the FRACTURE DEPARTMENT.

Two HOUSE SURGEONS to the E.N.T. DEPARTMENT.

Two HOUSE SURGEONS to the GYNÆCOLOGICAL DEPARTMENT.

Salaries at the rate of £80 per annum, plus £20 per annum war bonus. An additional £10 per annum will be paid to the two Residents appointed to the Weston-super-Mare Hospital.

Candidates to send in their applications on forms to be obtained from the undersigned on or before 17th July, 1942, together with copies of not more than three testimonials. The elected candidates must become members of a Medical Defence Association before taking up their appointments.

ELLIS C. SMITH, F.C.I.S., Secretary and House Governor.

Bristol Royal Hospital.

Incorporating the
BRISTOL ROYAL INFIRMARY AND BRISTOL GENERAL HOSPITAL.

Applications are invited from registered medical practitioners, Male and Female, for the appointments of—

(1) CASUALTY HOUSE SURGEON (B1). Males holding A or B2 posts and rejected by the R.A.M.C. may apply.

(2) CASUALTY HOUSE SURGEON (B2). Practitioners qualified more than three months, and liable under National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.) may apply;

for the six months commencing 1st September, 1942.

Salary at the rate of £150 per annum plus £20 War Bonus with full residential emoluments.

Candidates to send in their applications on forms to be obtained from the undersigned on or before 24th July, 1942, together with copies of not more than three testimonials. The elected candidates must become members of a medical defence association before taking up their appointments.

ELLIS C. SMITH, F.C.I.S., Secretary and House Governor.

Coventry and Warwickshire Hospital.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE PHYSICIAN (A), to become vacant on 1st August, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41. The appointment is for six months. Salary is at the rate of £150 per annum, plus £20 cost-of-living bonus, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent immediately to—

S. CECIL HILL, House Governor and Secretary.

Port of Manchester Rehabilitation COMMITTEE.

Applications are invited from Male registered medical practitioners under the age of fifty for appointment of Full-time MEDICAL OFFICER to Manchester Dock Workers and an associated Rehabilitation Centre. Salary is at rate of £1000 per annum, rising to £1200, together with car allowance.

Applications, stating age, special experience, and qualifications, accompanied by copies of three recent testimonials, should be sent to the HONORARY SECRETARY, Port of Manchester Rehabilitation Committee, Transport House, The Crescent, Salford, 5, not later than 31st July, 1942.

City of Portsmouth.

SAINT MARY'S HOSPITAL. (1200 Beds.)

Applications are invited from Male registered medical practitioners for the appointments, limited to a period of two years, of Two SENIOR RESIDENT MEDICAL OFFICERS (B1 posts), to become vacant shortly.

Applicants should have had at least two years' hospital experience and preference will be given to those having special knowledge of and experience in (*a*) general medical work for the first post, and (*b*) midwifery and gynæcology for the second post. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. Salary at the rate of £350 per annum for the first year and £375 per annum for the second year, with residential emoluments valued at £125 per annum.

Application forms may be obtained from, and must be returned to, the Medical Officer of Health, Northern Secondary School, Mayfield-road, Portsmouth.

F. J. SPARKS, Town Clerk.

Municipal Offices, Royal Beach Hotel, Southsea,
6th July, 1942.

City of Manchester.

CRUMPSALL HOSPITAL (1400 Beds) and
WITHINGTON HOSPITAL (1150 Beds).
(Both recognised under the Regulations for the F.R.C.S.)

APPOINTMENTS OF RESIDENT ASSISTANT OBSTETRICAL OFFICERS (B2).

Applications are invited from registered medical practitioners, Male and Female, for the above-mentioned posts which are vacant now. Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may apply when appointment is limited to six months; otherwise to twelve months. Candidates should have had previous experience in midwifery. The basic salary for each post is £250 per annum, with board, residence, and laundry in addition, subject to the Manchester Corporation conditions of service. A temporary cost-of-living wages award is payable in addition to the salary stated.

Full information and forms of application may be obtained from the Medical Officer of Health, Hospitals Administration Section, P.O. Box No. 399, Town Hall, Manchester, 2, and applications for the post must be received by him not later than 29th July, 1942.

Canvassing in any form is prohibited.

R. H. ADCOCK, Town Clerk.

Town Hall, Manchester, 2, 1st July, 1942.

City of Manchester.

BOOTH HALL HOSPITAL. (760 Beds.)

APPOINTMENT OF RESIDENT ASSISTANT MEDICAL OFFICER (A).

Applications are invited from registered medical practitioners, Male and Female, for the above-mentioned post which is vacant now, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for a period of six months; otherwise for twelve months. The basic salary for the appointment is £200 per annum, or to a practitioner within three months of qualification as above £125 per annum, with board, residence, and laundry in addition. A temporary cost-of-living wages award is payable in addition to the foregoing salaries. The appointment is subject to the Manchester Corporation conditions of service.

Full information and forms of application may be obtained from the Medical Officer of Health, Hospitals Administration Section, P.O. Box No. 399, Town Hall, Manchester, 2, and applications for the post must be received by him not later than 22nd July, 1942.

Canvassing in any form is prohibited.

R. H. ADCOCK, Town Clerk.

Town Hall, Manchester, 2, 6th July, 1942.

City of Birmingham.

BABIES' HOSPITAL, CANWELL HALL, Near SUTTON COLDFIELD. (84 Beds.)

A RESIDENT MEDICAL OFFICER (B1) is required on 1st October, 1942, for a period of six months. The Hospital deals with children under five years of age suffering with acute and chronic medical conditions. The Resident Medical Officer will also be required to take two child welfare sessions weekly at the Maternity and Child Welfare Centres in the City of Birmingham. It is desirable for the candidate to have had some special experience in children's work. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. Salary £350 per annum and bonus, with board, residence, and laundry.

Applications, with copies of three testimonials, should be forwarded to the MEDICAL OFFICER OF HEALTH, Council House, Birmingham, 3, on or before 24th July, 1942.

Kettering and District General HOSPITAL.

Applications are invited from registered medical practitioners, Male or Female, for the appointment of a HOUSE PHYSICIAN and HOUSE SURGEON (two A posts), to become vacant on 1st August, 1942, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointments will be for a period of six months. Salary is at the rate of £200 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, nationality, and accompanied by copies of recent testimonials, to—

G. W. JACKSON, Secretary-Superintendent.

Nottingham City Hospital.

Applications are invited from registered medical practitioners for the appointments of—

(1) JUNIOR HOUSE SURGEON (A); and

(2) JUNIOR OBSTETRICAL HOUSE SURGEON (A);

to become vacant forthwith, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointments will be for a period of six months; otherwise renewable, subject to satisfactory service, for a further six months. Salary at the rate of £250 per annum, with full residential emoluments.

Applications, together with testimonials, stating age, nationality, and qualifications, should be sent at once to—

J. E. RICHARDS, Town Clerk.

The Guildhall, Nottingham, 1st July, 1942.

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Hull Royal Infirmary.

Applications are invited from registered practitioners, Male and Female, for the following appointments:—

PARENT HOSPITAL:
(1) HOUSE SURGEON (B2), vacant October.

BRANCH HOSPITAL:
(2) HOUSE PHYSICIAN (B2), vacant October.

Practitioners qualified more than three months and liable under the National Service Acts, 1939–41 (males must be rejected by the R.A.M.C.), may apply when appointment will be limited to six months.

BRANCH HOSPITAL:
(3) SENIOR HOUSE SURGEON (B1), vacant September. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply.

PARENT HOSPITAL:
(4) CASUALTY OFFICER (A), vacant September. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may apply when appointment will be for a period of six months.

Salary for Post No. 3 is at the rate of £225 per annum. For the remaining posts the rate is at £200 per annum. Each post carries full residential emoluments. Posts 1 and 3 are recognised for the F.R.C.S. examinations. Post 2 is recognised for the London M.D. examination.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of recent testimonials, should be addressed to: R. J. CARLESS, House Governor.

Chesterfield and North Derbyshire ROYAL HOSPITAL. (380 Beds.)

Applications are invited for the following posts, duties to commence as soon as possible:—

HOUSE SURGEON (A) for the OPHTHALMIC and EAR, NOSE, AND THROAT DEPARTMENTS. Salary at the rate of £200 per annum, with full residential emoluments.

HOUSE SURGEON (A). Salary at the rate of £165 per annum, with full residential emoluments.

Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may apply when appointments will be for a period of six months.

Applications, stating age, nationality, and qualifications with dates, experience, and present post, accompanied by three copies of recent testimonials, should reach me as soon as possible.

M. H. BOONE, House Governor and Secretary.

County Borough of Ipswich. BOROUGH GENERAL HOSPITAL.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a TEMPORARY RESIDENT ASSISTANT MEDICAL OFFICER (B1), to become vacant on 27th July. Applicants should have held house appointments and had surgical experience. R practitioners holding A or B2 posts and rejected by the R.A.M.C. may apply. Salary is at the rate of £350 per annum, plus full residential emoluments.

Applications to the MEDICAL OFFICER OF HEALTH, Public Health Department, Elm-street, Ipswich.

The University of Liverpool.

The Council invites applications for the post of LECTURER (Ungraded) IN BIOCHEMISTRY, at a salary according to qualifications not exceeding £400 per annum. The tenure of the post will be for one year in the first instance. Experience of teaching Biochemistry and of biochemical research is desirable. The person appointed will be required to comply with the conditions of the Federated Superannuation System for Universities, and to commence duties as soon as possible.

Applications, together with the names of three referees, should be forwarded by Thursday, 30th July, 1942, to—

STANLEY DUMBELL, Registrar.

General Hospital, Nottingham. (535 Beds.)

Applications are invited from registered medical practitioners (Male and Female), including practitioners within three months of qualification and liable under the National Service Acts, 1939–41, when appointment will be for a period of six months, for the appointment of RESIDENT CASUALTY OFFICER (A) for the above Hospital. Duties to commence on or about 24th August. Salary at the rate of £200 per annum, with full residential emoluments.

Applications, stating age, nationality, qualifications with dates, and accompanied by copies of testimonials, to—

HENRY M. STANLEY, House Governor and Secretary.

The Adela Shaw Orthopædic Hospital, KIRBYMOORSIDE, YORK. (332 Beds.)

Applications are invited for the post of HOUSE SURGEON (A) (Female). Salary £200 per annum, with board, residence, and laundry. Practitioners within three months of qualification and liable under the National Service Acts, 1939–41, may apply when appointment will be for six months; otherwise it may be renewable.

Applications, stating age, nationality, qualifications with dates, and accompanied by copies of testimonials, to—

A. W. YOUNGS, F.C.I.S., Secretary.

Taunton and Somerset Hospital.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE SURGEON (A), to become vacant at the end of July, including practitioners within three months of qualification and liable under the National Service Acts, 1939–41. The appointment will be for a period of six months. Salary is at the rate of £150 per annum, with full residential emoluments.

Applications to be sent to the SECRETARY-SUPERINTENDENT.

Barbados General Hospital. (284 Beds.)

Wanted, a duly qualified medical practitioner as HOUSE SURGEON. Preference will be given to candidates who have had experience in administering anæsthetics. Salary £325 per annum, with quarters fully furnished for a single man, free water, lighting allowance, and no local rates. The appointment, which is renewable, will be for either three, two, or one and a half years, subject to three months' notice on either side to terminate the engagement. Candidates must state whether they wish to engage for three, two, or one and a half years. First-class single passage direct to Barbados will be paid by the Hospital Board, a proportionate part to be refunded if the term of service for which the candidate is engaged be not completed.

Applications, stating age and date of graduation, accompanied by a recent photograph, a medical certificate of physical fitness at the time of application, and recent professional and personal testimonials, should be sent by air mail to the Medical Superintendent, General Hospital, Barbados, B.W.I., from whom further particulars may be obtained. Canadian graduates must hold qualifications registrable in England. Candidates holding a United States degree must be registered in the State of New York.

By Order,
W. GOODMAN, Secretary.

Demonstrator in Pathology and BACTERIOLOGY (whole-time) required as soon as possible.

Salary at the rate of £300 per annum.

Applications, with copies of recent testimonials, to be sent to the DEAN, MEDICAL SCHOOL, GUY'S HOSPITAL, S.E.1, not later than 25th July.

Applications are invited for the post of TEMPORARY MEDICAL DIRECTOR of the CHILD GUIDANCE COUNCIL.

The office is entirely administrative, and the time required is roughly equivalent to three sessions per week, but most of the work can be done in the officer's own time. Salary at the rate of 250 guineas per annum.

Applications should be sent before the 1st August to the SECRETARY, Child Guidance Council, 23, Queen-square, Bath.

Applications are invited for post of Whole-time MEDICAL OFFICER for group of industrial undertakings on the North-east Coast.

The successful candidate will be required to supervise the ambulance and first-aid organisations at the several works and to visit each in turn, and take an active interest in all matters affecting the health and general well-being of the employees. Salary £800 to £1000 per annum.—Apply, with full particulars, to Address, No. 890, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Wanted at once, Locum Tenens to take charge of mixed Private and Panel Practice in North Surrey, for duration.

House provided. Aliens and Jews need not apply.—Write, stating qualifications, salary, &c., to: Address, No. 898, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Radiologist (D.M.R.Lond.) of considerable experience requires part-time Diagnostic Work in London.

—Reply, Address, No. 899, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Indian, M.B., B.S.(Lond.), wants ASSISTANTSHIP or LOCUM, in or near London.

—Address, No. 897, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

For Sale.—⅓rd Share, worth £1,000, in mixed industrial and country Practice.

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Lancet (1940), ii, 400.
**J. Pharmacol. (1940), 69, 331.*

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